

=> FILE REG

FILE 'REGISTRY' ENTERED AT 15:13:51 ON 18 JAN 2006

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STRUCTURE FILE UPDATES: 17 JAN 2006 HIGHEST RN 872085-61-5

DICTIONARY FILE UPDATES: 17 JAN 2006 HIGHEST RN 872085-61-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

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*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS for details.

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<http://www.cas.org/ONLINE/UG/regprops.html>

=> FILE HCAPLU

FILE 'HCAPLUS' ENTERED AT 15:13:55 ON 18 JAN 2006

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FILE COVERS 1907 - 18 Jan 2006 VOL 144 ISS 4

FILE LAST UPDATED: 17 Jan 2006 (20060117/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE

L2 54 SEA FILE=REGISTRY ABB=ON (10377-51-2/BI OR 10411-26-4/BI OR 105-58-8/BI OR 105-64-6/BI OR 105-74-8/BI OR 108-32-7/BI OR 108-88-3/BI OR 108-90-7/BI OR 126-33-0/BI OR 126-58-9/BI OR 127-63-9/BI OR 131651-65-5/BI OR 1330-20-7/BI OR 14024-11-4/BI OR 14283-07-9/BI OR 14666-78-5/BI OR 149-32-6/BI OR 15520-11-3/BI OR 1561-49-5/BI OR 162684-16-4/BI OR 1712-87-4/BI OR 18424-17-4/BI OR 193215-00-8/BI OR 21324-40-3/BI OR 26748-41-4/BI OR 27359-10-0/BI OR 28452-93-9/BI OR 29935-35-1/BI OR 3006-82-4/BI OR 32752-09-3/BI OR 33454-82-9/BI OR 35363-40-7/BI OR 39300-70-4/BI OR 4437-85-8/BI OR 462-06-6/BI OR 502-44-3/BI OR 56-81-5/BI OR 56525-42-9/BI OR 616-38-6/BI OR 620-32-6/BI OR 623-53-0/BI OR 623-96-1/BI OR 67-71-0/BI OR 71-43-2/BI OR 77-77-0/BI OR 7790-99-0/BI OR 7791-03-9/BI OR 78-67-1/BI OR 79-10-7/BI OR 90076-65-6/BI OR 92177-99-6/BI OR 94-36-0/BI OR 96-49-1/BI OR 98-95-3/BI)

L3 1 SEA FILE=REGISTRY ABB=ON L2 AND AZO

L4 11 SEA FILE=REGISTRY ABB=ON L2 AND PEROX?

L5 42 SEA FILE=REGISTRY ABB=ON L2 NOT (L3 OR L4)

L6 7 SEA FILE=REGISTRY ABB=ON L5 AND SULFON

L7 3 SEA FILE=REGISTRY ABB=ON L6 AND 1/LI

L8 4 SEA FILE=REGISTRY ABB=ON L6 NOT L7

L9 1 SEA FILE=REGISTRY ABB=ON "BUTADIENE SULFONE"/CN

L11 2 SEA FILE=REGISTRY ABB=ON L2 AND THIOPHENE

L12 7330 SEA FILE=HCAPLUS ABB=ON L8 OR L9 OR L11

L13 1356 SEA FILE=HCAPLUS ABB=ON (L12 OR ?SULFONE?) (L) ELECTROLYT?

L14 18837 SEA FILE=HCAPLUS ABB=ON L3 OR L4

L15 4261 SEA FILE=HCAPLUS ABB=ON (L14 OR ?PEROX? OR AZO?) (L) ELECTROLYT?

L16 41 SEA FILE=HCAPLUS ABB=ON L13 AND L15

L17 19 SEA FILE=HCAPLUS ABB=ON L16 AND ELECTROCHEMICAL/SC, SX

L18 14 SEA FILE=REGISTRY ABB=ON L2 AND (CARBONIC OR CARBONATE)

L19 31 SEA FILE=REGISTRY ABB=ON L2 NOT (L6 OR L11 OR L18)

L20 10 SEA FILE=REGISTRY ABB=ON L19 AND 1/LI

L22 21 SEA FILE=REGISTRY ABB=ON L19 NOT L20

L24 14 SEA FILE=REGISTRY ABB=ON L22 NOT L4

L25 317131 SEA FILE=REGISTRY ABB=ON PACR/PCT

L26 49114 SEA FILE=REGISTRY ABB=ON L25 AND METHACRYL?

L27 8 SEA FILE=REGISTRY ABB=ON L24 AND 1/NR

L28 15 SEA FILE=HCAPLUS ABB=ON L16 AND BATTER?

L29 20 SEA FILE=HCAPLUS ABB=ON L17 OR L28

L30 2 SEA FILE=HCAPLUS ABB=ON L16 AND L26

L31 7 SEA FILE=HCAPLUS ABB=ON L16 AND ?METHACRYL?

L32 13 SEA FILE=HCAPLUS ABB=ON L16 AND (L18 OR ?CARBONATE?)

L33 5 SEA FILE=HCAPLUS ABB=ON L16 AND L27

L34 23 SEA FILE=HCAPLUS ABB=ON (L29 OR L30 OR L31 OR L32 OR L33)

L35 1 SEA FILE=HCAPLUS ABB=ON L16 AND ?CARBONIC?

L36 23 SEA FILE=HCAPLUS ABB=ON L34 OR L35

=> D L36 BIB ABS IND HITSTR 1-23

L36 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

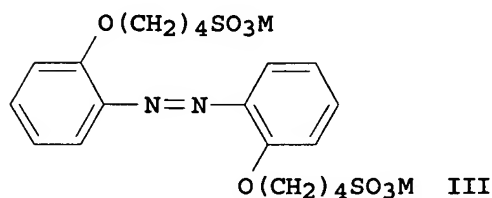
AN 2005:155693 HCAPLUS

DN 142:219693

TI Manufacture of 2,2'-bis(4-sulfonatobutoxy)-4,4'-benzidine or its alkali metal salts, and their intermediates

IN Matsuda, Aiko; Mizoguchi, Akira
 PA Sumitomo Electric Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 14 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005047881	A2	20050224	JP 2003-283992	20030731
PRAI	JP 2003-283992		20030731		
GI					



- AB 2,2'-Bis(4-sulfonatobutoxy)-4,4'-benzidine or its alkali metal salts, useful for sulfo-containing polyimides for fuel cell **electrolytes**, etc., are manufactured by treating 3-nitrophenol (I) with 1,4-butanedisulfone (II) in the presence of alkali metal hydroxides, mixing the resulting alkali metal 1-nitro-3-(sulfonatobutoxy)benzenes with water, aldehydes, and naphthoquinoid-type reduction catalysts, dropping alkali metal hydroxides to the resulting aqueous solns., further reducing the reaction mixts. under alkali condition without isolating the resulting azo compds. III (M = alkali metal) or their corresponding **azoxy** compds., and treating the resulting hydrazo compds. with acids. Thus, 0.360 mol I was treated with 0.90 mol II in the presence of 0.896 mol NaOH at 100° for 11 h, mixed with 37% aqueous HCHO solution and 2,3-dichloro-1,4-naphthoquinone, NaOH dropped, and further reduced in the presence of Zn powder at pH 14.0, and heated with 0.2 mol H₂SO₄ at 95° for 3 h to give 2,2'-bis(sodium 4-sulfonatobutoxy)-4,4'-benzidine.
- IC ICM C07C303-22
 ICS C07C303-32; C07C309-11; C07B061-00
- CC 35-2 (Chemistry of Synthetic High Polymers)
 Section cross-reference(s): 25, 52
- ST sulfonatobutoxybenzidine alkali metal salt manuf; polyimide fuel cell **electrolyte** sulfonatobutoxybenzidine manuf; butanesulfone nitrophenol substitution sodium hydroxide; naphthoquinone catalyst sodium nitrosulfonatobutoxybenzene redn formaldehyde; redn sodium **azobenzeneoxybutanesulfonate** sodium hydroxide; sulfuric acid benzidine rearrangement sodium sulfonatobutoxyphenylhydrazine; sodium sulfonatobutoxybenzidine manuf
- IT Rearrangement
 (benzidine; manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT Fuel cell **electrolytes**
 (manufacture of bis(sulfonatobutoxy)benzidines for sulfo-containing polyimide fuel cell **electrolytes** from nitrophenol and **butanesulfone**)
- IT Reduction
 (manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and

- butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT Alkali metal hydroxides
RL: RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)
(manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT Aldehydes, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT Reduction catalysts
(naphthoquinoid-type; manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT Substitution reaction
(nitrophenol-butanesulfone substitution; manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT Polyimides, preparation
RL: PNU (Preparation, unclassified); PREP (Preparation)
(sulfo-containing; manufacture of bis(sulfonatobutoxy)benzidines for sulfo-containing polyimide fuel cell electrolytes from nitrophenol and butanesulfone)
- IT 823177-65-7P 844431-33-0P
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT 844431-31-8P 844431-32-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT 554-84-7, 3-Nitrophenol 1633-83-6, 1,4-Butanesultone
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT 1310-73-2, Sodium hydroxide, reactions
RL: RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)
(manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT 50-00-0, Formaldehyde, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT 7664-93-9, Sulfuric acid, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(rearrangement of hydrazo compds. into benzidines by; manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and di(alkali metal) sulfonatobutoxyphenylhydrazines)
- IT 117-80-6, 2,3-Dichloro-1,4-naphthoquinone 7440-66-6, Zinc, uses

RL: CAT (Catalyst use); USES (Uses)
 (reduction catalyst; manufacture of bis(sulfonatobutoxy)benzidines from
 nitrophenol and butanesulfone via di(alkali metal)
 azobenzeneoxybutanesulfonate and di(alkali metal)
 sulfonatobutoxyphenylhydrazines)

IT 7732-18-5, Water, uses

RL: NUU (Other use, unclassified); USES (Uses)
 (solvent; manufacture of bis(sulfonatobutoxy)benzidines from nitrophenol and
 butanesulfone via di(alkali metal) azobenzeneoxybutanesulfonate and
 di(alkali metal) sulfonatobutoxyphenylhydrazines)

L36 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:155490 HCAPLUS

DN 142:264348

TI Electrolyte for rechargeable lithium **battery**

IN Lee, Yong-Beom; Song, Eui-Hwan; Kim, Kwang-Sup; Earmme, Tae-Shik; Kim,
 You-Mee

PA Samsung SDI Co., Ltd., S. Korea

SO Eur. Pat. Appl., 32 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1508934	A1	20050223	EP 2004-90320	20040819
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	JP 2005072003	A2	20050317	JP 2004-241017	20040820
	US 2005084765	A1	20050421	US 2004-924248	20040820
PRAI	KR 2003-57716	A	20030820		
	KR 2004-5874	A	20040129		

OS MARPAT 142:264348

AB Disclosed is an electrolyte for a rechargeable lithium **battery**,
 including a mixture of organic solvents including a cyclic solvent and a
 nitrile-based solvent represented by the formula R-C.tplbond.N (R is from
 C1-10 aliphatic hydrocarbons, C1-10 halogenated aliphatic hydrocarbons, C6-10
 aromatic hydrocarbons, and C6-10 halogenated aromatic hydrocarbons) and a
 lithium salt.

IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy
 Technology)

Section cross-reference(s): 38

ST electrolyte rechargeable lithium **battery**

IT Nitriles, uses

RL: DEV (Device component use); USES (Uses)
 (aliphatic, C1-10; electrolyte for rechargeable lithium **battery**)

IT Nitriles, uses

RL: DEV (Device component use); USES (Uses)
 (aromatic, C6-10; electrolyte for rechargeable lithium **battery**)

IT **Battery** electrolytes

(electrolyte for rechargeable lithium **battery**)

IT Lactones

RL: DEV (Device component use); USES (Uses)
 (electrolyte for rechargeable lithium **battery**)

IT **Secondary batteries**

(lithium; electrolyte for rechargeable lithium **battery**)

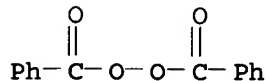
IT **Peroxides**, uses

RL: MOA (Modifier or additive use); USES (Uses)
 (organic; **electrolyte** for rechargeable lithium **battery**)

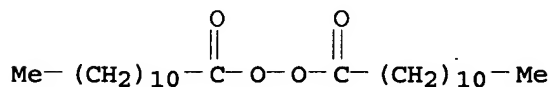
-)
- IT 94-36-0, Dibenzoyl peroxide, processes 105-74-8
 , Dilauroyl peroxide 107-71-1, tert-Butylperoxy
 acetate 109-13-7, tert-Butylperoxyisobutyrate 110-22-5,
 Diacetyl peroxide 614-45-9, tert-Butylperoxy
 benzoate 686-31-7, tert-Amylperoxy 2-ethylhexanoate
 927-07-1, tert-Butyl peroxy pivalate 2372-21-6, tert-Butyl
 peroxy isopropyl carbonate 3006-82-4,
 tert-Butyl peroxy-2-ethyl hexanoate 3851-87-4,
 Bis(3,5,5-trimethyl)hexanoyl peroxide 4419-11-8, 2,2'-
 Azobis(2,4-dimethylvaleronitrile) 13122-18-4, tert-
 Butylperoxy 3,5,5-trimethylhexanoate 15518-51-1, Diethylene
 glycol bis(tert-butylperoxycarbonate) 15520-11-3,
 Di(4-tert-butylcyclohexyl)peroxydicarbonate 25551-14-8
 26748-38-9, tert-Butyl peroxy neoheptanoate 26748-41-4
 , tert-Butyl peroxy neodecanoate 29240-17-3, tert-Amyl
 peroxy pivalate 34443-12-4, tert-Butyl peroxy
 2-ethylhexyl carbonate 36536-42-2, 1,6-Hexanediol
 bis(tert-butyl peroxycarbonate) 51240-95-0,
 1,1,3,3-Tetramethylbutyl peroxy neodecanoate 51938-28-4, tert-
 Hexylperoxy pivalate 52238-68-3, Bis(3-methoxybutyl)
 peroxydicarbonate 68860-54-8 96989-15-0 845717-44-4
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)
 (electrolyte for rechargeable lithium battery)
- IT 79-20-9, Methyl acetate 96-48-0, γ -Butyrolactone 96-49-1
 , Ethylene carbonate 105-58-8, Diethyl
 carbonate 106-70-7, Methyl hexanoate 107-12-0, Propionitrile
 107-31-3, Methyl formate 108-29-2, γ -Valerolactone
 108-32-7, Propylene carbonate 109-74-0, Butyronitrile
 110-59-8, Valeronitrile 124-12-9, Caprylonitrile 140-29-4,
 Phenylacetone nitrile 141-78-6, Ethyl acetate, uses 326-62-5,
 2-Fluorophenylacetone nitrile 394-47-8, 2-Fluorobenzonitrile 459-22-3,
 4-Fluorophenylacetone nitrile 502-44-3, ϵ -Caprolactone
 542-28-9, δ -Valerolactone 542-52-9, Dibutyl carbonate
 616-38-6, Dimethyl carbonate 623-53-0, Ethyl
 methyl carbonate 623-96-1, Dipropyl carbonate
 629-08-3, Heptanenitrile 630-18-2, tert-Butyl cyanide 695-06-7,
 γ -Caprolactone 766-05-2, Cyclohexanecarbonitrile 1194-02-1,
 4-Fluorobenzonitrile 4254-02-8, Cyclopentanecarbonitrile
 4437-85-8, Butylene carbonate 7439-93-2D, Lithium,
 salt 7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide
 (CoLiO₂) 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium
 tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3,
 Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate
 33454-82-9, Lithium triflate 57381-51-8, 4-Chloro-2-fluoro-benzonitrile
 60702-69-4, 2-Chloro-4-fluoro-benzonitrile 90076-65-6 90240-74-7
 127813-79-0 132843-44-8 179802-95-0, Cobalt lithium manganese nickel
 oxide (Co_{0.1}LiMn_{0.1}Ni_{0.8}O₂) 845717-45-5
 RL: DEV (Device component use); USES (Uses)
 (electrolyte for rechargeable lithium battery)
- IT 75-05-8, Acetonitrile, uses 77-77-0, DiVinyl sulfone
 105-64-6, Di-isopropylperoxydicarbonate 628-73-9,
 Capronitrile 872-36-6, Vinylene carbonate 3741-38-6,
 Ethylene sulfite 16111-62-9, Bis(2-ethylhexyl) peroxydicarbonate
 22537-94-6 71331-99-2, Bis(4-tert-butylcyclohexyl)
 peroxycarbonate 114435-02-8, Fluoroethylene carbonate
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte for rechargeable lithium battery)
- IT 94-36-0, Dibenzoyl peroxide, processes 105-74-8

, Dilauroyl peroxide 3006-82-4, tert-Butyl
 peroxy-2-ethyl hexanoate 15520-11-3,
 Di(4-tert-butylcyclohexyl)peroxydicarbonate 26748-41-4
 , tert-Butyl peroxy neodecanoate
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)
 (electrolyte for rechargeable lithium battery)

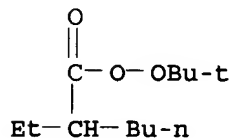
RN 94-36-0 HCAPLUS
 CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



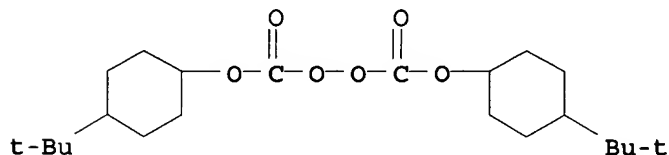
RN 105-74-8 HCAPLUS
 CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



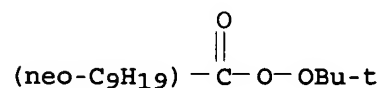
RN 3006-82-4 HCAPLUS
 CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 15520-11-3 HCAPLUS
 CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
 (CA INDEX NAME)



RN 26748-41-4 HCAPLUS
 CN Neodecaneperoxoic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



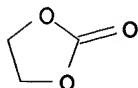
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl

carbonate 108-32-7, Propylene carbonate
502-44-3, ϵ -Caprolactone 616-38-6, Dimethyl
carbonate 623-53-0, Ethyl methyl carbonate
623-96-1, Dipropyl carbonate 4437-85-8,
Butylene carbonate

RL: DEV (Device component use); USES (Uses)
(electrolyte for rechargeable lithium battery)

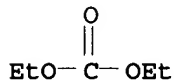
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



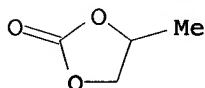
RN 105-58-8 HCAPLUS

CN Carbonic acid, diethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



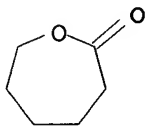
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



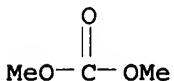
RN 502-44-3 HCAPLUS

CN 2-Oxepanone (8CI, 9CI) (CA INDEX NAME)



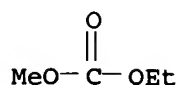
RN 616-38-6 HCAPLUS

CN Carbonic acid, dimethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)

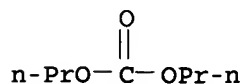


RN 623-53-0 HCAPLUS

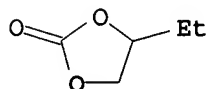
CN Carbonic acid, ethyl methyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



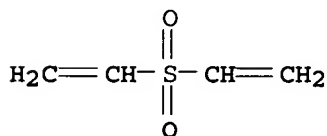
RN 623-96-1 HCAPLUS
 CN Carbonic acid, dipropyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



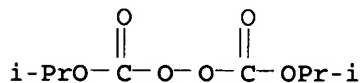
RN 4437-85-8 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-ethyl- (9CI) (CA INDEX NAME)



IT 77-77-0, DiVinyl sulfone 105-64-6, Di-
isopropylperoxydicarbonate
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte for rechargeable lithium battery)
 RN 77-77-0 HCAPLUS
 CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



RN 105-64-6 HCAPLUS
 CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:57618 HCAPLUS

DN 142:159488

TI Polymer electrolyte and polymer electrolyte membrane which uses the
 electrolyte, membrane-electrode laminate, and polymer electrolyte fuel
 cell

IN Nakamura, Masataka; Shimoyama, Naoki; Izuhara, Daisuke; Kono, Satoshi;
 Kitai, Masayuki

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 57 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005019055	A2	20050120	JP 2003-179178	20030624
PRAI	JP 2003-179178		20030624		

AB The electrolyte is obtained by mixing a 1st H⁺-conductive polymer with a 2nd polymer has a nonfreezing water content rate 40-100 weight%, obtained from the following formula: (nonfreezing water content rate) = (nonfreezing water volume) / (low m.p. water volume + nonfreezing water volume) + 100(%). The electrolyte comprises the above electrolyte. The laminate comprises the above electrolyte or the electrolyte membrane. The fuel cell has the above electrolyte or the electrolyte membrane.

IC ICM H01M008-02
ICS C08L101-02; H01B001-06; H01M008-06; H01M008-10

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST fuel cell polymer electrolyte membrane mixed polymer

IT Polythiophenylenes
RL: DEV (Device component use); USES (Uses)
(carboxylated; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Fuel cell electrolytes
Fuel cells
Polymer electrolytes
(electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Epoxy resins, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(fabrics; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

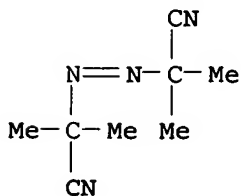
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(fluorine- and sulfo-containing, ionomers; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(phosphate group containing; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Polythiophenylenes
RL: DEV (Device component use); USES (Uses)
(phosphonated; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)

IT Polyketones
RL: MOA (Modifier or additive use); USES (Uses)

- (polyether-, sulfonated; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT Polyethers, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (polyketone-, sulfonated; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT Fluoropolymers, uses
 RL: DEV (Device component use); USES (Uses)
 (polyoxyalkylene-, sulfo-containing, ionomers; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT Ionomers
 RL: DEV (Device component use); USES (Uses)
 (polyoxyalkylenes, fluorine- and sulfo-containing; electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT Polysulfones, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (sulfonated; **electrolytes** containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT 7440-06-4, Platinum, uses 12779-05-4
 RL: CAT (Catalyst use); USES (Uses)
 (electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT 1321-74-0, Divinyl benzene, uses 4766-57-8, Tetrabutoxy silane
 5593-70-4, Titanium tetrabutoxy 7440-44-0, Carbon, uses 9002-84-0,
 Polytetrafluoroethylene 28212-48-8D, Polydiphenoxy phosphazene,
 sulfonated 66796-30-3, Nafion 117 536513-90-3
 RL: DEV (Device component use); USES (Uses)
 (electrolytes containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT 56-81-5, Glycerin, uses 78-67-1, Azobisisobutyronitrile
 681-84-5, Tetramethoxy silane 822-06-0, 1,6-Hexane diisocyanate
 998-30-1, Triethoxy silane 2996-92-1, Phenyl trimethoxy silane
 9016-74-4D, Poly(hydroxyphenylene), sulfonated 17882-08-5 18407-59-5
 25322-69-4, Polypropylene glycol 28469-78-5, Tetramethoxy zirconium
 116875-10-6 444910-71-8, BPEFG 827608-20-8
 RL: MOA (Modifier or additive use); USES (Uses)
 (**electrolytes** containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT 27028-97-3D, Polyphenylene sulfide **sulfone**, sulfonated
 RL: DEV (Device component use); USES (Uses)
 (sulfonated; **electrolytes** containing mixed polymers for membrane-electrode laminates in fuel cells)
- IT 78-67-1, Azobisisobutyronitrile
 RL: MOA (Modifier or additive use); USES (Uses)
 (**electrolytes** containing mixed polymers for membrane-electrode laminates in fuel cells)
- RN 78-67-1 HCAPLUS
 CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



L36 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:16052 HCAPLUS

DN 142:97541

TI Polymer electrolyte membrane electrode for polymer electrolyte fuel cell

IN Nakamura, Masataka; Shimoyama, Naoki; Izuhara, Daisuke; Kono, Shunji;

Kidai, Masayuki

PA Toray Industries, Inc., Japan

SO PCT Int. Appl., 101 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	WO 2005001969	A1	20050106	WO 2003-JP8032	20030625
	WO 2005001969	C1	20050224		
	W: CA, CN, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,				
	IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				

PRAI WO 2003-JP8032 20030625

AB The material is characterized by having high proton conductivity, low fuel crossover, high output, and high energy d. The electrolyte is a mix. comprising a proton conductive polymer and another polymer different from the previous one. The ratio of antifreeze water quantity in polymer electrolyte is between 40-100 (wt)%.

IC ICM H01M008-02

ICS H01M008-10; H01M001-06

CC 52-3 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 35, 72

ST polymer electrolyte membrane electrode fuel cell

IT Polyketones

RL: TEM (Technical or engineered material use); USES (Uses)

(polyether-; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT Polyethers, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(polyketone-; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT Electrodes

(polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT Fluoropolymers, uses

Polyimides, uses

Polyoxyalkylenes, uses

Polysulfones, uses

Polythiophenylenes

RL: TEM (Technical or engineered material use); USES (Uses)

(polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT Membranes, nonbiological

(polymer electrolyte; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT Ionomers

RL: TEM (Technical or engineered material use); USES (Uses)

(polyoxyalkylenes, fluorine- and sulfo-containing, for electrode preparation; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT 25085-99-8 66072-39-7

RL: TEM (Technical or engineered material use); USES (Uses)

(epoxy resin; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT 7440-06-4, Platinum, uses 7440-18-8, Ruthenium, uses 7440-44-0, Carbon, uses 9002-84-0, Ptfe
 RL: TEM (Technical or engineered material use); USES (Uses)
 (for electrode preparation; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

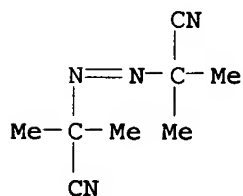
IT 78-67-1, Aibn 822-06-0, 1,6-Hexanediisocyanate 998-30-1, Triethoxysilane 1321-74-0, Divinylbenzene, uses 2487-90-3D, Trimethoxysilane, phenoxy 2996-92-1, Phenyltrimethoxysilane 5314-52-3D, Dimethoxysilane, phenoxy 5593-70-4, Tetrautoxy titanium 6843-66-9, Diphenyldimethoxysilane 7440-32-6D, Titanium, alkoxides 25322-69-4, Polypropyleneglycol 27028-97-3, Polyphenylenesulfide sulfone 28212-48-8, Polydiphenoxyphosphazene 28212-48-8D, Polydiphenoxyphosphazene, sulfonide 28469-78-5, Tetramethoxy zirconium 50851-57-5D, Polystyrene sulfonic acid, sodium salt 66796-30-3, Nafion 117 444910-71-8, Bpefg 536513-90-3
 RL: TEM (Technical or engineered material use); USES (Uses)
 (polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT 116875-10-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (proton conductive polymer; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT 31694-16-3D, sulfonide
 RL: TEM (Technical or engineered material use); USES (Uses)
 (sulfonide; polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

IT 78-67-1, Aibn
 RL: TEM (Technical or engineered material use); USES (Uses)
 (polymer electrolyte membrane electrode for polymer electrolyte fuel cell)

RN 78-67-1 HCAPLUS
 CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)

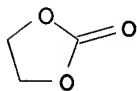


RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

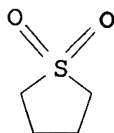
L36 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2004:1042417 HCAPLUS
 DN 142:300815
 TI New lithium salts for rechargeable battery electrolytes
 AU Mandal, Braja; Sooksimuang, Thanasat; Griffin, Brian; Padhi, Akshaya; Filler, Robert
 CS Department of Biological, Chemical and Physical Sciences, Illinois Institute of Technology, Chicago, IL, 60616, USA
 SO Solid State Ionics (2004), 175(1-4), 267-272
 CODEN: SSIOD3; ISSN: 0167-2738
 PB Elsevier B.V.
 DT Journal

- LA English
- AB The facile syntheses of new, low-cost, non-fluorinated, sulfonyl-substituted imide and methide lithium salts are described. These salts, prepared for potential application in lithium ion rechargeable **battery** electrolytes, exhibit very good electrochem. and thermal behavior. While the salts are very soluble in DMSO and sulfolane, their solubilities in standard **carbonate** solvents is less than adequate for **battery** operations. Mol. modifications to improve solubility are in progress.
- CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76
- ST synthesis lithium salt imide methide secondary **battery** electrolyte cond
- IT Stability
(hydrolytic, thermal, electrochem., of lithium imide salts; new lithium salts for rechargeable **battery** electrolytes)
- IT Secondary **batteries**
(lithium; new lithium salts for rechargeable **battery** electrolytes)
- IT Alkylation
Battery electrolytes
Lithiation
(new lithium salts for rechargeable **battery** electrolytes)
- IT **Sulfones**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(new lithium salts for rechargeable **battery** electrolytes)
- IT Solubility
(of lithium imide salts in **carbonate** solvents, DMSO, and sulfolane; new lithium salts for rechargeable **battery** electrolytes)
- IT Electric impedance
(of lithium salt solns. in DMSO; new lithium salts for rechargeable **battery** electrolytes)
- IT Electric conductivity
(of salts in solvents; new lithium salts for rechargeable **battery** electrolytes)
- IT Imides
Sulfonic acids, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(sulfonimides; new lithium salts for rechargeable **battery** electrolytes)
- IT Decomposition
(temperature of; new lithium salts for rechargeable **battery** electrolytes)
- IT 67-68-5, DMSO, uses 96-49-1, Ethylene **carbonate** 126-33-0, Sulfolane 616-38-6, Dimethyl **carbonate**
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(new lithium salts for rechargeable **battery** electrolytes)
- IT 21324-40-3, Lithium hexafluorophosphate
RL: PRP (Properties)
(new lithium salts for rechargeable **battery** electrolytes)
- IT 1070-92-4P 1750-62-5P 4610-99-5P 90325-14-7P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(new lithium salts for rechargeable **battery** electrolytes)
- IT 59099-56-8P 133395-17-2P 259106-93-9P 847684-90-6P 847684-93-9P

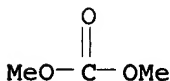
847684-94-0P 847684-96-2P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(new lithium salts for rechargeable **battery** electrolytes)
IT 75-08-1, Ethanethiol 110-88-3, 1,3,5-Trioxane, reactions 124-63-0,
Methanesulfonyl chloride 420-04-2, Cyanamide 594-44-5, Ethanesulfonyl
chloride 598-30-1, sec-Butyl Lithium 917-54-4, Methyl lithium
1310-65-2, Lithium hydroxide 1618-26-4, Bis(methylthio)methane
7646-69-7, Sodium hydride (NaH) 7722-84-1, Hydrogen **peroxide**,
reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(new lithium salts for rechargeable **battery**
electrolytes)
IT 15873-42-4P, Imidodisulfuryl chloride 34782-37-1P 34782-38-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(new lithium salts for rechargeable **battery** electrolytes)
IT 96-49-1, Ethylene **carbonate** 126-33-0,
Sulfolane 616-38-6, Dimethyl **carbonate**
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(new lithium salts for rechargeable **battery**
electrolytes)
RN 96-49-1 HCAPLUS
CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



RN 616-38-6 HCAPLUS
CN Carbonic acid, dimethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1036367 HCAPLUS
DN 142:31648
TI Capacitors including interacting separators and surfactants
IN Norton, John D.; Rorvick, Anthony W.; Nielsen, Christian S.
PA USA
SO U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004240156	A1	20041202	US 2003-622957	20030718
	US 2004246657 ✓	A1	20041209	US 2003-618047	20030711
	US 6985352 ✓	B2	20060110		
	US 2005117277	A1	20050602	US 2003-618048	20030711
PRAI	US 2003-474800P	P	20030530		

AB The present invention relates generally to capacitor cells and the use of separator materials that interact with one or more surfactants in such cells. More specifically, the present invention is related to capacitor cells that include separators that are impregnated with a surfactant or that absorb and/or interact with a surfactant that is included in an electrolyte placed within the capacitor cell.

IC ICM H01G009-02

INCL 361512000

CC 76-10 (Electric Phenomena)

Section cross-reference(s): 66

ST electrolytic capacitor separator surfactant absorption impregnation

IT Carbonates, processes

RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (aryl, crosslinking agents; electrolytic capacitors including interacting separators and surfactants)

IT Polymers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
 (co-; electrolytic capacitors including interacting separators and surfactants)

IT Polyanhydrides

RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (crosslinking agent; electrolytic capacitors including interacting separators and surfactants)

IT Acid halides

Acids, processes

Alcohols, processes

Aldehydes, processes

Alkyl halides

Amines, processes

Anhydrides

Azides

Epoxides

Esters, processes

Isocyanates

Nitro compounds

Peroxides, processes

Sulfones

Thiols, processes

Vinyl compounds, processes

RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (crosslinking agents; electrolytic capacitors including interacting separators and surfactants)

IT Absorbed substances

Crosslinking agents

Electrolytes

Electrolytic capacitors

- Impregnation
Surfactants
(electrolytic capacitors including interacting separators and surfactants)
- IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(electrolytic capacitors including interacting separators and surfactants)
- IT Acetals
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(haloacetals, crosslinking agents; electrolytic capacitors including interacting separators and surfactants)
- IT Paper
(kraft, separator; electrolytic capacitors including interacting separators and surfactants)
- IT Imides
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(maleimides, crosslinking agents; electrolytic capacitors including interacting separators and surfactants)
- IT Paper
(manila, separator; electrolytic capacitors including interacting separators and surfactants)
- IT Peptides, uses
Polysaccharides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polypeptides, surfactants; electrolytic capacitors including interacting separators and surfactants)
- IT Paper
(separator; electrolytic capacitors including interacting separators and surfactants)
- IT Polycarbonates, uses
Polyesters, uses
Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(separator; electrolytic capacitors including interacting separators and surfactants)
- IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; electrolytic capacitors including interacting separators and surfactants)
- IT 77-77-0, Vinyl sulfone 543-20-4, Succinyl chloride
70539-42-3 85419-94-9 92933-84-1
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(crosslinking agent; electrolytic capacitors including interacting separators and surfactants)
- IT 9002-98-6 9003-39-8, Polyvinylpyrrolidone 9004-61-9, Hyaluronic acid
9004-61-9D, Hyaluronic acid, derivs. 25104-18-1, Polylysine 78644-42-5
RL: TEM (Technical or engineered material use); USES (Uses)
(polypeptides, surfactants; electrolytic capacitors including interacting separators and surfactants)
- IT 9002-84-0, Polytetrafluoroethylene 9002-88-4, Polyethylene 9003-07-0,
Polypropylene 139044-91-0, Cyclopore 259173-47-2, Isopore
471879-18-2, Memtrex 781643-21-8, Poretics
RL: TEM (Technical or engineered material use); USES (Uses)
(separator; electrolytic capacitors including interacting separators and surfactants)
- IT 9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid 9003-05-8,

Polyacrylamide 9004-54-0, Dextran, uses 9005-32-7, Alginic acid
9012-36-6, Agarose 25067-34-9, Vinyl alcohol-ethene copolymer
25213-24-5, Vinyl acetate-vinyl alcohol copolymer 25722-70-7,
Polyglycidol

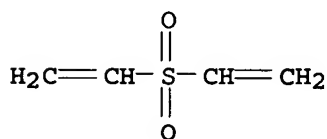
RL: TEM (Technical or engineered material use); USES (Uses)
(surfactant; electrolytic capacitors including interacting separators
and surfactants)

IT 77-77-0, Vinyl sulfone

RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical,
engineering or chemical process); PROC (Process); USES (Uses)
(crosslinking agent; electrolytic capacitors including
interacting separators and surfactants)

RN 77-77-0 HCAPLUS

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



L36 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:1020075 HCAPLUS

DN 141:410626

TI High purity electrolytic sulfonic acid solutions

IN Martyak, Nicholas Michael; Noswitz, Martin; Smith, Gary S.; Janney,
Patrick Kendall; Ollivier, Jean-Marie

PA Atofina Chemicals, Inc., USA

SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004101860	A1	20041125	WO 2004-US12887	20040427
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI US 2003-469764P P 20030512

AB Disclosed is a solution for an electrochem. process, the solution containing a sulfonic acid and having a low concentration of sulfur compds., either low or high valence, that are susceptible to reduction and which is intended for use in electrodeposition, batteries, conductive polymers and descaling processes.

IC ICM C25D005-00

ICS C25D021-18; C23C016-00; C25B003-00; C02F001-72; C25B001-02;
H01F003-06; H01M006-00

CC 23-11 (Aliphatic Compounds)

Section cross-reference(s): 52, 72

ST high purity electrolytic sulfonic acid soln

IT Sulfonic acids, preparation
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)
(derivs.; high purity electrolytic solns. of)

IT Purification
(of impure sulfonic acids in preparation of high purity electrolytic sulfonic acid solns.)

IT Reducing agents
(purification of impure sulfonic acids from high valent sulfur compds. in preparation of high purity electrolytic sulfonic acid solns. using)

IT Oxidation, electrochemical
Oxidizing agents
(purification of impure sulfonic acids from low valent sulfur compds. in preparation of high purity electrolytic sulfonic acid solns. using)

IT Electrodeposition
(purification of impure sulfonic acids in preparation of high purity electrolytic sulfonic acid solns. for use in)

IT Sulfonic acids, preparation
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PYP (Physical process); PREP (Preparation); PROC (Process)
(salts; high purity electrolytic solns. of)

IT 7440-44-0, Activated carbon, uses
RL: NUU (Other use, unclassified); USES (Uses)
(activated; purification of impure sulfonic acids in preparation of high purity electrolytic sulfonic acid solns. using)

IT 66-27-3P, Methylmethane sulfonate 2949-92-0P, Methylmethane thiosulfonate 5324-44-7P 37557-96-3P, Dichloromethylmethysulfone

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PUR (Purification or recovery); PREP (Preparation); PROC (Process)
(preparation of high purity electrolytic solns. of)

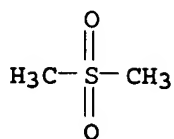
IT 7697-37-2, Nitric acid, reactions 7722-84-1, Hydrogen peroxide, reactions 7722-86-3, Monoperoxyulfuric acid 7782-50-5, Chlorine, reactions 14333-13-2, Permanganate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(purification of impure sulfonic acids from low valent sulfur compds. in preparation of high purity electrolytic sulfonic acid solns. using)

IT 67-71-0, Dimethylsulfone 75-18-3, Dimethylsulfide 624-92-0, Dimethyldisulfide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
(removing in process of preparation of high purity electrolytic solns. of sulfonic acid)

IT 67-71-0, Dimethylsulfone
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
(removing in process of preparation of high purity electrolytic solns. of sulfonic acid)

RN 67-71-0 HCAPLUS

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:203431 HCAPLUS

DN 140:238483

TI Electrolyte for a lithium battery

IN Park, Yong-Chul; Jung, Won-Ii; Kim, Geun-Bae; Cho, Jae-Phil; Jung, Cheol-Soo

PA S. Korea

SO U.S. Pat. Appl. Publ., 13 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004048163	A1	20040311	US 2003-656086	20030905
	JP 2004103573	A2	20040402	JP 2003-282119	20030729
	CN 1495961	A	20040512	CN 2003-164853	20030906
PRAI	KR 2002-53879	A	20020906		

OS MARPAT 140:238483

AB An **electrolyte** for a lithium battery includes a nonaq. organic solvent, a lithium salt, and an additive comprising (a) a **sulfone**-based compound and (b) a C3-30 organic **peroxide** or **azo**-based compound. The **electrolyte** may further include a poly(ester) (meth)acrylate or a polymer that is derived from a (polyester)polyol with at least three hydroxyl (-OH) groups, where a portion or all of the hydroxyl groups are substituted with a (meth)acrylic ester and the remaining hydroxyl groups that are not substituted with the (meth)acrylic ester are substituted with a group having no radical reactivity. The lithium battery comprising the **electrolyte** of the present invention has a significantly improved charge-discharge and cycle life characteristics, recovery capacity ratio at high temperature, and swelling inhibition properties.

IC ICM H01M010-40

INCL 429326000; 429329000; 429339000; 429340000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST lithium battery electrolyte

IT Battery electrolytes

(electrolyte for lithium battery)

IT Aromatic hydrocarbons, uses

Carbonates, uses

Esters, uses

Ethers, uses

Ketones, uses

RL: DEV (Device component use); USES (Uses)

(electrolyte for lithium battery)

IT Azo compounds

RL: MOA (Modifier or additive use); USES (Uses)

applicant

(electrolyte for lithium battery)
IT Carbonaceous materials (technological products)
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium battery)
IT **Sulfones**
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium battery)
IT Polyesters, uses
RL: DEV (Device component use); USES (Uses)
(hydroxy-terminated; electrolyte for lithium battery)
IT **Secondary batteries**
(lithium; electrolyte for lithium battery)
IT Polyesters, uses
RL: DEV (Device component use); USES (Uses)
(methacrylate; electrolyte for lithium battery)
IT **Peroxides**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(organic, C3-30; electrolyte for lithium battery)
IT **Esters**, uses
RL: DEV (Device component use); USES (Uses)
(poly-; electrolyte for lithium battery)
IT **Imides**
Sulfonic acids, uses
RL: DEV (Device component use); USES (Uses)
(sulfonimides, perfluoro derivs., lithium salts; electrolyte for lithium battery)
IT 56-81-5, Glycerol, uses 71-43-2, Benzene, uses 96-49-1
, Ethylene carbonate 98-95-3, Nitrobenzene, uses
105-58-8, Diethyl carbonate 108-32-7,
Propylene carbonate 108-88-3, Toluene, uses
108-90-7, Chlorobenzene, uses 149-32-6, Erythritol
462-06-6, Fluorobenzene 616-38-6, Dimethyl
carbonate 623-53-0, Methylene carbonate
623-96-1, Dipropyl carbonate 1330-20-7,
Xylene, uses 4437-85-8, Butylene carbonate
7790-99-0, Iodine chloride (ICl) 7791-03-9, Lithium perchlorate
10377-51-2, Lithium iodide (LiI) 14024-11-4, Lithium
tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 18424-17-4,
Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate
27359-10-0, Trifluorotoluene 29935-35-1, Lithium
hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7,
Ethyl propyl carbonate 39300-70-4, Lithium nickel oxide
56525-42-9, Methyl propyl carbonate 90076-65-6
131651-65-5, Lithium nonafluorobutanesulfonate 162684-16-4, Lithium
manganese nickel oxide 193215-00-8, Cobalt lithiummanganese nickel oxide
Co_{0.1}LiMn_{0.2}Ni_{0.7}O₂
RL: DEV (Device component use); USES (Uses)
(electrolyte for lithium battery)
IT 67-71-0, Methyl sulfone 77-77-0, Vinyl
sulfone 78-67-1, 2,2'-Azobisisobutyronitrile
94-36-0, Benzoyl peroxide, uses 105-64-6,
Diisopropyl peroxy dicarbonate 105-74-8,
Lauroyl peroxide 126-33-0, Tetramethylene
sulfone 127-63-9, Phenyl sulfone
620-32-6, Benzyl sulfone 1561-49-5,
Dicyclohexylperoxy dicarbonate 1712-87-4,
m-Toluoyl peroxide 3006-82-4, tert-Butylperoxy
-2-ethyl hexanoate 14666-78-5 15520-11-3,
Bis(4-tert-butylcyclohexyl)peroxy dicarbonate
26748-41-4 28452-93-9, Butadiene sulfone

32752-09-3, Isobutyl peroxide 92177-99-6,
3,3,5-Trimethylhexanoyl peroxide
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium battery)

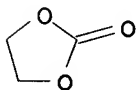
IT 79-10-7DP, Acrylic acid, reaction product with dipentaerythritol and
ε-caprolactone and butylcarbonic acid 126-58-9DP,
Dipentaerythritol, reaction product with ε-caprolactone and
acrylic acid and butylcarbonic acid 502-44-3DP,
ε-Caprolactone, reaction product with dipentaerythritol and
acrylic acid and butylcarbonic acid 10411-26-4DP,
MonoButylcarbonate, reaction product with dipentaerythritol and
ε-caprolactone and acrylic acid
RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(electrolyte for lithium battery)

IT 71-43-2, Benzene, uses 96-49-1, Ethylene
carbonate 98-95-3, Nitrobenzene, uses 105-58-8
, Diethyl carbonate 108-32-7, Propylene
carbonate 108-88-3, Toluene, uses 108-90-7,
Chlorobenzene, uses 462-06-6, Fluorobenzene 616-38-6,
Dimethyl carbonate 623-53-0, Methylethyl
carbonate 623-96-1, Dipropyl carbonate
1330-20-7, Xylene, uses 4437-85-8, Butylene
carbonate 27359-10-0, Trifluorotoluene
35363-40-7, Ethyl propyl carbonate 56525-42-9,
Methyl propyl carbonate
RL: DEV (Device component use); USES (Uses)
(electrolyte for lithium battery)

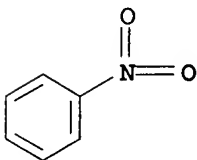
RN 71-43-2 HCAPLUS
CN Benzene (8CI, 9CI) (CA INDEX NAME)



RN 96-49-1 HCAPLUS
CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)

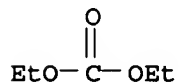


RN 98-95-3 HCAPLUS
CN Benzene, nitro- (8CI, 9CI) (CA INDEX NAME)



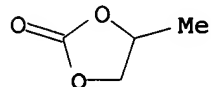
RN 105-58-8 HCAPLUS

CN Carbonic acid, diethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



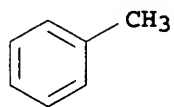
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



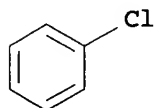
RN 108-88-3 HCAPLUS

CN Benzene, methyl- (9CI) (CA INDEX NAME)



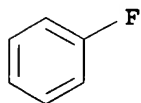
RN 108-90-7 HCAPLUS

CN Benzene, chloro- (8CI, 9CI) (CA INDEX NAME)



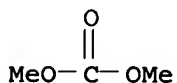
RN 462-06-6 HCAPLUS

CN Benzene, fluoro- (8CI, 9CI) (CA INDEX NAME)



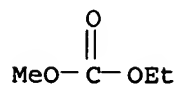
RN 616-38-6 HCAPLUS

CN Carbonic acid, dimethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



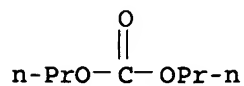
RN 623-53-0 HCAPLUS

CN Carbonic acid, ethyl methyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 623-96-1 HCAPLUS

CN Carbonic acid, dipropyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1330-20-7 HCAPLUS

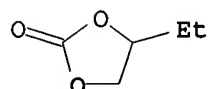
CN Benzene, dimethyl- (9CI) (CA INDEX NAME)



2 (D1-Me)

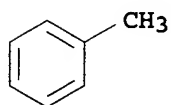
RN 4437-85-8 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-ethyl- (9CI) (CA INDEX NAME)



RN 27359-10-0 HCAPLUS

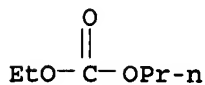
CN Benzene, methyl-, trifluoro deriv. (9CI) (CA INDEX NAME)



3 (D1-F)

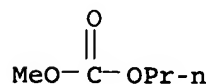
RN 35363-40-7 HCAPLUS

CN Carbonic acid, ethyl propyl ester (7CI, 9CI) (CA INDEX NAME)



RN 56525-42-9 HCAPLUS

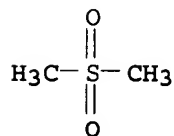
CN Carbonic acid, methyl propyl ester (7CI, 9CI) (CA INDEX NAME)



IT 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, uses 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 620-32-6, Benzyl sulfone 1561-49-5, Dicyclohexylperoxy dicarbonate 1712-87-4, m-Toluoyl peroxide 3006-82-4, tert-Butylperoxy -2-ethyl hexanoate 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 26748-41-4 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide
 RL: MOA (Modifier or additive use); USES (Uses) (electrolyte for lithium battery)

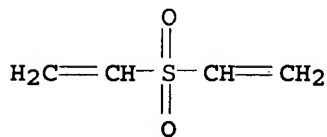
RN 67-71-0 HCAPLUS

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



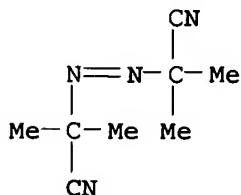
RN 77-77-0 HCAPLUS

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)

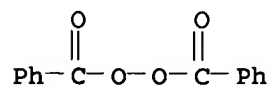


RN 78-67-1 HCAPLUS

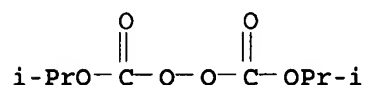
CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



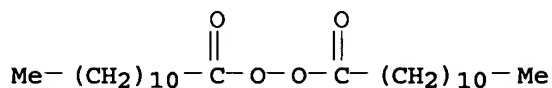
RN 94-36-0 HCAPLUS
CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



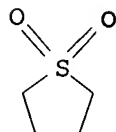
RN 105-64-6 HCAPLUS
CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



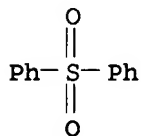
RN 105-74-8 HCAPLUS
CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



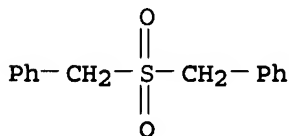
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



RN 127-63-9 HCAPLUS
CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)

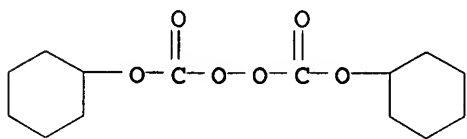


RN 620-32-6 HCAPLUS
CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



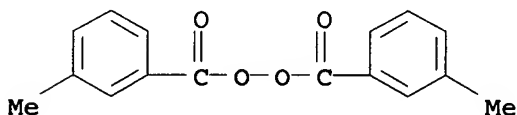
RN 1561-49-5 HCAPLUS

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



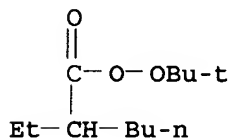
RN 1712-87-4 HCAPLUS

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



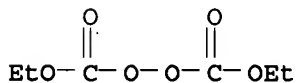
RN 3006-82-4 HCAPLUS

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



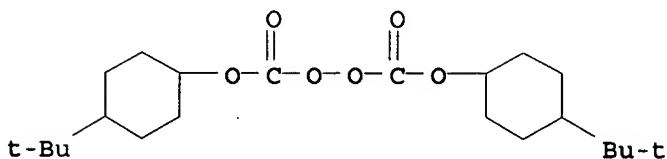
RN 14666-78-5 HCAPLUS

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



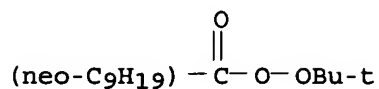
RN 15520-11-3 HCAPLUS

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



RN 26748-41-4 HCAPLUS

CN Neodecaneperoxoic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



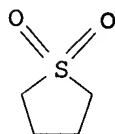
RN 28452-93-9 HCAPLUS

CN Thiophene, dihydro-, 1,1-dioxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

CM 1

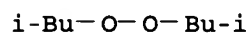
CRN 126-33-0

CMF C4 H8 O2 S



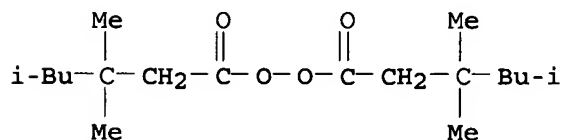
RN 32752-09-3 HCAPLUS

CN Peroxide, bis(2-methylpropyl) (9CI) (CA INDEX NAME)



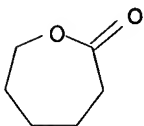
RN 92177-99-6 HCAPLUS

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)

IT 502-44-3DP, ϵ -Caprolactone, reaction product with dipentaerythritol and acrylic acid and butylcarbonic acid10411-26-4DP, MonoButylcarbonate, reaction product with dipentaerythritol and ϵ -caprolactone and acrylic acidRL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(electrolyte for lithium battery)

RN 502-44-3 HCAPLUS

CN 2-Oxepanone (8CI, 9CI) (CA INDEX NAME)



RN 10411-26-4 HCAPLUS

CN Carbonic acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)

n-Bu-O-CO₂H

L36 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:119843 HCAPLUS

DN 140:149224

TI Nonaqueous electrolytic solution with improved safety for lithium **battery**

IN Kim, Jun-ho; Lee, Ha-young; Choy, Sang-hoon; Kim, Ho-sung

PA Samsung SDI Co., Ltd., S. Korea

SO U.S. Pat. Appl. Publ., 12 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004029018	A1	20040212	US 2003-637554	20030811
	JP 2004079532	A2	20040311	JP 2003-290946	20030808
	CN 1495960	A	20040512	CN 2003-158672	20030812
PRAI	KR 2002-47510	A	20020812		

AB A nonaq. electrolytic solution and a lithium **battery** employing the same include a lithium salt, an organic solvent, and a halogenated benzene compound. The use of the nonaq. electrolytic solution causes formation of a polymer by oxidative decomposition of the electrolytic solution even if a sharp voltage increase occurs due to overcharging of the **battery**, leading to consumption of an overcharge current, thus protecting the **battery**.

IC ICM H01M010-40

INCL 429326000; 429200000; 429340000; 429331000; 429332000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST lithium **battery** nonaq electrolyte soln improved safety

IT Esters, uses

Ethers, uses

Hydrocarbons, uses

RL: MOA (Modifier or additive use); USES (Uses)

(C1-20; nonaq. electrolytic solution with improved safety for lithium **battery**)

IT Aromatic hydrocarbons, uses

RL: MOA (Modifier or additive use); USES (Uses)

(C5-20; nonaq. electrolytic solution with improved safety for lithium **battery**)

IT Secondary **batteries**

(lithium; nonaq. electrolytic solution with improved safety for lithium **battery**)

IT **Battery** electrolytes

(nonaq. electrolytic solution with improved safety for lithium **battery**)

IT Polyesters, uses

RL: MOA (Modifier or additive use); USES (Uses)

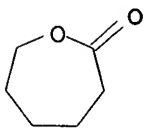
(nonaq. electrolytic solution with improved safety for lithium **battery**)

IT Alcohols, uses

RL: MOA (Modifier or additive use); USES (Uses)

(polyhydric; nonaq. electrolytic solution with improved safety for lithium **battery**)

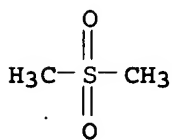
- IT 3087-37-4, Tetrapropyltitanate
RL: CAT (Catalyst use); USES (Uses)
(nonaq. electrolytic solution with improved safety for lithium battery)
- IT 502-44-3, ϵ -Caprolactone 7439-93-2D, Lithium, salt
12190-79-3, Cobalt lithium oxide colio2
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolytic solution with improved safety for lithium battery)
- IT 126-58-9DP, Dipentaerythritol, derivative
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(nonaq. electrolytic solution with improved safety for lithium battery)
- IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone
71-43-2D, Benzene, halogenated 77-77-0, Vinyl sulfone 94-36-0, Benzoylperoxide, uses 96-49-1, Ethylene carbonate 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 108-32-7, Propylene carbonate 115-77-5, Pentaerythritol, uses 126-33-0, Tetramethylene sulfone 126-58-9, DiPentaerythritol 127-63-9, Phenyl sulfone 456-55-3, Trifluoromethyl phenyl ether 462-06-6, Fluorobenzene 620-32-6, Benzyl sulfone 623-53-0, Ethyl methyl carbonate 1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl peroxide 2972-19-2 3006-82-4, tert-Butylperoxy-2-ethylhexanoate 9002-88-4, Polyethylene 9003-07-0, Polypropylene 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate 21151-56-4, Benzene, 1-chloro-4-(chloromethoxy)- 21324-40-3, Lithium hexafluorophosphate 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide 49717-97-7, 2-Propenoic acid, 2-methyl-, ion(1-) homopolymer, uses 92177-99-6, 3,3,5-Trimethylhexanoylperoxide 651294-25-6 651294-26-7 651294-27-8
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolytic solution with improved safety for lithium battery)
- IT 502-44-3, ϵ -Caprolactone
RL: DEV (Device component use); USES (Uses)
(nonaq. electrolytic solution with improved safety for lithium battery)
- RN 502-44-3 HCAPLUS
CN 2-Oxepanone (8CI, 9CI) (CA INDEX NAME)



- IT 67-71-0, Methyl sulfone 71-43-2D, Benzene, halogenated 77-77-0, Vinyl sulfone 94-36-0, Benzoylperoxide, uses 96-49-1, Ethylene carbonate 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 108-32-7, Propylene carbonate 126-33-0,

Tetramethylene sulfone 127-63-9, Phenyl sulfone 462-06-6, Fluorobenzene 620-32-6, Benzyl sulfone 623-53-0, Ethyl methyl carbonate 1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl peroxide 3006-82-4, tert-Butylperoxy-2-ethylhexanoate 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoylperoxide
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. electrolytic solution with improved safety for lithium battery)

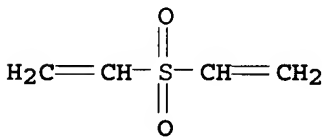
RN 67-71-0 HCAPLUS
CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



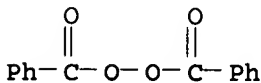
RN 71-43-2 HCAPLUS
CN Benzene (8CI, 9CI) (CA INDEX NAME)



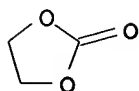
RN 77-77-0 HCAPLUS
CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



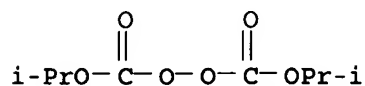
RN 94-36-0 HCAPLUS
CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



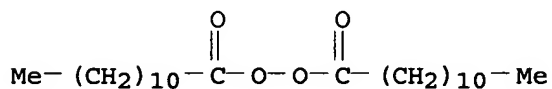
RN 96-49-1 HCAPLUS
CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



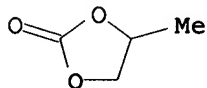
RN 105-64-6 HCAPLUS
CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



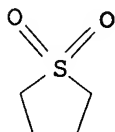
RN 105-74-8 HCAPLUS
CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



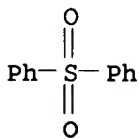
RN 108-32-7 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



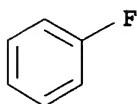
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



RN 127-63-9 HCAPLUS
CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)

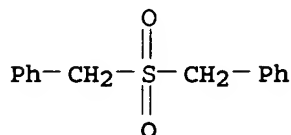


RN 462-06-6 HCAPLUS
CN Benzene, fluoro- (8CI, 9CI) (CA INDEX NAME)



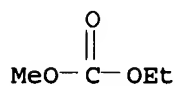
RN 620-32-6 HCAPLUS

CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



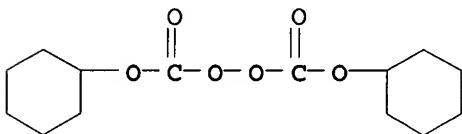
RN 623-53-0 HCAPLUS

CN Carbonic acid, ethyl methyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



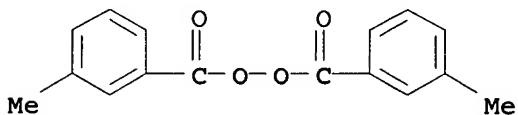
RN 1561-49-5 HCAPLUS

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



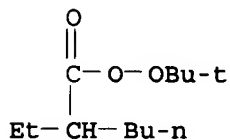
RN 1712-87-4 HCAPLUS

CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)



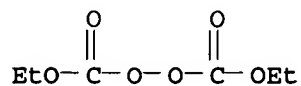
RN 3006-82-4 HCAPLUS

CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

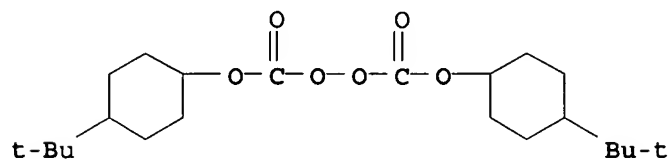


RN 14666-78-5 HCAPLUS

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 15520-11-3 HCAPLUS

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
(CA INDEX NAME)

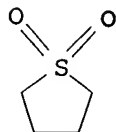
RN 28452-93-9 HCAPLUS

CN Thiophene, dihydro-, 1,1-dioxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

CM 1

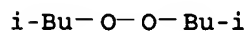
CRN 126-33-0

CMF C4 H8 O2 S



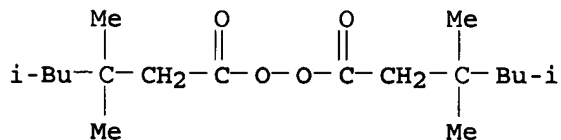
RN 32752-09-3 HCAPLUS

CN Peroxide, bis(2-methylpropyl) (9CI) (CA INDEX NAME)



RN 92177-99-6 HCAPLUS

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



L36 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:95701 HCAPLUS

DN 140:147277

TI Ion-conductive resin compositions and their cured products with excellent flexibility and self-supporting properties

IN Uno, Keiichi

PA Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004035869	A2	20040205	JP 2002-225355	20020628
PRAI	JP 2002-225355		20020628		

AB The compns., useful for solid **electrolyte** films for Li **batteries**, fuel cells, and capacitors, contain monomers (A) bearing polymerizable functional groups and salt units consisting of C1-10 hydrocarbon-(un)substituted ammonium cations (selected from imidazolium, pyrazolium, benzimidazolium, pyridinium, indolium, carbazolium, quinolinium, piperidinium, piperazinium, C1-30-alkylammonium) and anions [selected from BF₄, PF₆, CnF_{2n+1}O₂, CnF_{2n+1}SO₃ (n = 1-4), (FSO₂)₂N(CF₃SO₂)₂N, (CF₂F₅SO₂)₂N, (CF₃SO₂)₃CCF₃SO₂NCOCF₃, RSO₃, RSO₂NSO₂CF₃ (R = aliphatic or aromatic group)], monomers (B) bearing ≥2 polymerizable functional groups, solvent-soluble resins (C), and polymerization initiators (D) at the molar ratio of A/B 99.5/0.5-80/20 and the weight ratio of (A + B)/C 99/1-20/80. Thus, a composition containing 1-ethyl-3-allylimidazolium bis[(trifluoromethyl)sulfonyl]amide 30, diallyl phthalate 0.98, Kynar 2801 (vinylidene fluoride-hexafluoropropylene copolymer) 10, and benzoyl **peroxide** 1.5 g was cast on a glass plate and cured at 100° for 5 min and at 130° for 30 min to give a film with sufficient toughness and ion conductivity 3.9 × 10⁻³ S/cm.

IC ICM C08F002-44

ICS C08F291-00

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 52

ST ion cond solid electrolyte film toughness; allylimidazolium salt copolymer film flexibility capacitor; ammonium salt polymn film fuel cell

IT Isoprene-styrene rubber

RL: TEM (Technical or engineered material use); USES (Uses)
(hydrogenated, block, diblock, Kraton G 1701, organic solvent-soluble resin; ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

IT Ionic conductors

Solid electrolytes

(ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

IT Polysulfones, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(polyether-, organic solvent-soluble resin; ion-conductive resin compns. for solid **electrolyte** films with good flexibility and self-supporting properties)

IT Polyethers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(**polysulfone**-, organic solvent-soluble resin; ion-conductive resin compns. for solid **electrolyte** films with good flexibility and self-supporting properties)

IT 34311-88-1P 652134-09-3P 652134-14-0P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(for monomer preparation; ion-conductive resin compns. for solid electrolyte films with good flexibility and self-supporting properties)

- IT 51-17-2, Benzimidazole 74-96-4, Ethyl bromide 98-70-4,
4-Styrenesulfonic acid 106-95-6, Allyl bromide, reactions 1072-63-5,
1-Vinylimidazole 1592-20-7, 4-Chloromethylstyrene 7098-07-9,
1-Ethylimidazole 90076-67-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(for monomer preparation; ion-conductive resin compns. for solid electrolyte
films with good flexibility and self-supporting properties)
- IT 652134-12-8P 652134-13-9P 652134-15-1P 652134-17-3P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material
use); PREP (Preparation); USES (Uses)
(ion-conductive resin compns. for solid electrolyte films with good
flexibility and self-supporting properties)
- IT 105729-79-1 694523-05-2
RL: TEM (Technical or engineered material use); USES (Uses)
(isoprene-styrene rubber, hydrogenated, block, diblock, Kraton G 1701,
organic solvent-soluble resin; ion-conductive resin compns. for solid
electrolyte films with good flexibility and self-supporting properties)
- IT 319476-28-3P 652129-54-9P 652134-11-7P 652134-16-2P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT
(Reactant or reagent)
(monomer; ion-conductive resin compns. for solid electrolyte films with
good flexibility and self-supporting properties)
- IT 9011-17-0, Kynar 2801 25135-51-7, Udel P 3500
RL: TEM (Technical or engineered material use); USES (Uses)
(organic solvent-soluble resin; ion-conductive resin compns. for solid
electrolyte films with good flexibility and self-supporting properties)
- L36 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:44652 HCAPLUS
DN 140:342007
TI Proton conducting membranes based on polymer blends for use in high
temperature PEM fuel cells
AU Kallitsis, Joannis K.; Gourdoupi, Nora
CS Department of Chemistry, University of Patras, GR-265 00, Greece
SO Journal of New Materials for Electrochemical Systems (2003), 6(4), 217-222
CODEN: JMESFQ; ISSN: 1480-2422
PB Journal of New Materials for Electrochemical Systems
DT Journal
LA English
AB Blends of sulfonated polysulfone (SPSF) with either
polybenzimidazole (PBI) or an aromatic polyether composed of pyridine and Ph
phosphin oxide units (PPyPO) were developed; they possessed promising
properties for exploitation as high temperature polymer electrolytes.
All blends exhibited good mech. and thermal stability and high ionic
conductivities in the range of 10-2 S/cm after doping with phosphoric
acid. Examination of the oxidative stability of the membranes was performed
using hydrogen peroxide in the presence of a catalytic amount of
FeCl2, and SPSF/PBI blends show low oxidative stability, even with 5% weight
PBI, while the SPSF/PPyPO blends showed improved properties concerning
their tolerance towards oxidative conditions. Finally, a preliminary work
on a PBI/PPyPO blend is reported. Initial results such as oxidative
stability and high ionic conductivity (10-2 S/cm) of this blend are encouraging
for further exploitation of this system.
- CC 52-2 (Electrochemical, Radiational, and Thermal Energy
Technology)
Section cross-reference(s): 35, 36, 38, 76
- ST proton conducting membrane polymer blend electrolyte PEM fuel
cell; polybenzimidazole polyether polysulfone pyridinyl
phosphine ionic cond phosphate doped
- IT Polyethers, uses

- RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(aromatic; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Membranes, nonbiological
(elec. conductive; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Glass transition temperature
Ionic conductivity
Loss modulus
Storage modulus
(of phosphate-doped polymer blends; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Stability
(oxidative; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Polyketones
Polysulfones, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(polyether-, sulfonated; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Polyethers, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(polyketone-, sulfonated; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Polyethers, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(polysulfone-, sulfonated; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Polymer electrolytes
(proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Polybenzimidazoles
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT Polysulfones, uses
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(sulfonated; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT 28576-59-2, Poly(2,2'-p-phenylene-5,5'-bibenzimidazole)
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(PBI, blends with PPyPO, phosphoric acid-doped; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)
- IT 643753-97-3, Phenol, 4,4'-(2,5-pyridinediyl)bis-, polymer with bis(4-fluorophenyl)phenylphosphine oxide
RL: PEP (Physical, engineering or chemical process); POF (Polymer in

formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (PPyPO, medium and high Mw, blends with PBI or SPSF(Na)x, phosphoric acid-doped; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)

IT 25135-51-7D, sulfonated, sodium salt
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (SPSF(Na)x, blends with PPyPO, phosphoric acid-doped; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)

IT 7664-38-2, Phosphoric acid, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (dopant; proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)

IT 7722-84-1, Hydrogen peroxide, reactions 7758-94-3, Ferrous chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (proton conducting membranes based on polymer blends for use in high temperature PEM fuel cells)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:796195 HCAPLUS
 DN 139:294681
 TI Electrolyte for lithium **battery** to reduce overcharge and improve electrochemical characteristics
 IN Kim, Jun-Ho; Lee, Ha-Young; Choy, Sang-Hoon; Kim, Ho-Sung; Noh, Hyeong-Gon
 PA Samsung SDI Co., Ltd., S. Korea
 SO U.S. Pat. Appl. Publ., 19 pp.
 CODEN: USXXCO

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003190529	A1	20031009	US 2003-393294	20030321
	KR 2003079310	A	20031010	KR 2002-18264	20020403
	CN 1449070	A	20031015	CN 2003-108529	20030328
	JP 2003297426	A2	20031017	JP 2003-100349	20030403
PRAI	KR 2002-18264	A	20020403		

OS MARPAT 139:294681

AB An **electrolyte** for a lithium **battery** includes a nonaq. organic solvent, a lithium salt, and an additive comprising (a) a compound represented by the formula [(R1)nC6H(6-n+m)(X)m], and (b) a compound selected from the group consisting of a **sulfone**-based compound, a poly(ester)(meth)acrylate, a polymer of poly(ester)(meth)acrylate, and a mixture thereof: wherein R1 is a C1-10 alkyl, a C 1-10 alkoxy, or a C6-10 aryl, and preferably a Me, Et, or methoxy, X is a halogen, and m and n are integers ranging from 1 to 5, where m+n is less than or equal to 6.

IC ICM H01M006-18

INCL 429307000; 429309000; 429326000; 429322000; 429323000; 429330000

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST lithium **battery** electrolyte overcharge lowering

IT **Battery** electrolytes

(electrolyte for lithium **battery** to reduce overcharge and improve electrochem. characteristics)

IT **Secondary batteries**

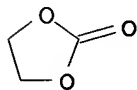
(lithium; electrolyte for lithium **battery** to reduce

- overcharge and improve electrochem. characteristics)
- IT **Peroxides**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(organic; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
- IT **Alcohols**, uses
RL: MOA (Modifier or additive use); USES (Uses)
(trihydric; **electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
- IT 3087-37-4, Tetrapropyltitanate
RL: CAT (Catalyst use); USES (Uses)
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
- IT 71-43-2, Benzene, uses 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-88-3, Toluene, uses 462-06-6, Fluorobenzene 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 1330-20-7, Xylene, uses 4437-85-8, Butylene carbonate 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide (LiI) 12355-58-7, Lithium aluminate (Li5AlO4) 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 27359-10-0, Trifluorotoluene 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate 56525-42-9, Methyl propyl carbonate 90076-65-6 131651-65-5, Lithium perfluorobutanesulfonate
RL: DEV (Device component use); USES (Uses)
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
- IT 126-58-9DP, Dipentaerythritol, reaction product with ϵ -caprolactone 502-44-3DP, ϵ -Caprolactone, reaction product with dipentaerythritol 609772-45-4P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**electrolyte** for lithium **battery** to reduce overcharge and improve electrochem. characteristics)
- IT 56-81-5, Glycerol, uses 67-71-0, Methyl sulfone 77-77-0, Vinyl sulfone 79-10-7D, Acrylic acid, ω -fatty acid esters C2-C21 79-41-4D, Methacrylic acid, ω -fatty acid esters C2-C21 94-36-0, Benzoyl peroxide, uses 104-92-7, 4-Bromoanisole 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 126-33-0, Tetramethylene sulfone 127-63-9, Phenyl sulfone 149-32-6, Erythritol 452-10-8, 2,4-Difluoroanisole 456-49-5, 3-Fluoroanisole 459-60-9, 4-Fluoroanisole 620-32-6, Benzyl sulfone 623-12-1, 4-Chloroanisole 1561-49-5, Dicyclohexyl peroxy dicarbonate 1712-87-4, m-Toluoyl peroxide 2398-37-0, 3-Bromoanisole 2845-89-8, 3-Chloroanisole 3006-82-4, tert-Butylperoxy-2-ethyl-hexanoate 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 28452-93-9, Butadiene sulfone 32752-09-3, Isobutyl peroxide 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide 93343-10-3, 3,5-Difluoroanisole 202925-08-4, 3-Chloro-5-fluoroanisole 609365-67-5
RL: MOA (Modifier or additive use); USES (Uses)
(**electrolyte** for lithium **battery** to reduce

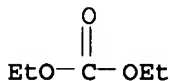
overcharge and improve electrochem. characteristics)
IT 71-43-2, Benzene, uses 96-49-1, Ethylene
carbonate 105-58-8, Diethyl carbonate
108-32-7, Propylene carbonate 108-88-3,
Toluene, uses 462-06-6, Fluorobenzene 616-38-6,
Dimethyl carbonate 623-53-0, Ethyl methyl
carbonate 623-96-1, Dipropyl carbonate
1330-20-7, Xylene, uses 4437-85-8, Butylene
carbonate 27359-10-0, Trifluorotoluene
35363-40-7, Ethyl propyl carbonate 56525-42-9,
Methyl propyl carbonate
RL: DEV (Device component use); USES (Uses)
(electrolyte for lithium battery to reduce overcharge and
improve electrochem. characteristics)
RN 71-43-2 HCAPLUS
CN Benzene (8CI, 9CI) (CA INDEX NAME)



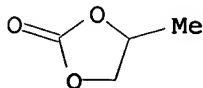
RN 96-49-1 HCAPLUS
CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



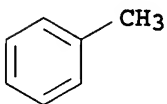
RN 105-58-8 HCAPLUS
CN Carbonic acid, diethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



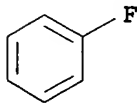
RN 108-32-7 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



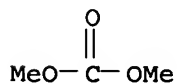
RN 108-88-3 HCAPLUS
CN Benzene, methyl- (9CI) (CA INDEX NAME)



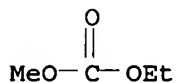
RN 462-06-6 HCAPLUS
CN Benzene, fluoro- (8CI, 9CI) (CA INDEX NAME)



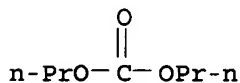
RN 616-38-6 HCAPLUS
CN Carbonic acid, dimethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 623-53-0 HCAPLUS
CN Carbonic acid, ethyl methyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 623-96-1 HCAPLUS
CN Carbonic acid, dipropyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

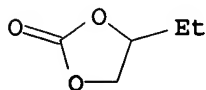


RN 1330-20-7 HCAPLUS
CN Benzene, dimethyl- (9CI) (CA INDEX NAME)

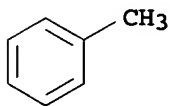


2 (D1-Me)

RN 4437-85-8 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-ethyl- (9CI) (CA INDEX NAME)

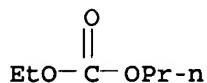


RN 27359-10-0 HCAPLUS
CN Benzene, methyl-, trifluoro deriv. (9CI) (CA INDEX NAME)

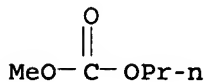


3 (D1-F)

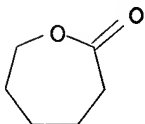
RN 35363-40-7 HCAPLUS
CN Carbonic acid, ethyl propyl ester (7CI, 9CI) (CA INDEX NAME)



RN 56525-42-9 HCAPLUS
CN Carbonic acid, methyl propyl ester (7CI, 9CI) (CA INDEX NAME)



IT 502-44-3DP, ϵ -Caprolactone, reaction product with
dipentaerythritol
RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(electrolyte for lithium battery to reduce overcharge and
improve electrochem. characteristics)
RN 502-44-3 HCAPLUS
CN 2-Oxepanone (8CI, 9CI) (CA INDEX NAME)

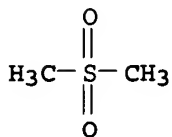


IT 67-71-0, Methyl sulfone 77-77-0, Vinyl
sulfone 94-36-0, Benzoyl peroxide, uses
105-64-6, Diisopropyl peroxy dicarbonate
105-74-8, Lauroyl peroxide 126-33-0,
Tetramethylene sulfone 127-63-9, Phenyl
sulfone 620-32-6, Benzyl sulfone
1561-49-5, Dicyclohexyl peroxy dicarbonate
1712-87-4, m-Toluoyl peroxide 3006-82-4, tert-
Butylperoxy-2-ethyl-hexanoate 14666-78-5
15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy

dicarbonate 28452-93-9, Butadiene sulfone
32752-09-3, Isobutyl peroxide 92177-99-6,
3,3,5-Trimethylhexanoyl peroxide
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium battery to reduce
overcharge and improve electrochem. characteristics)

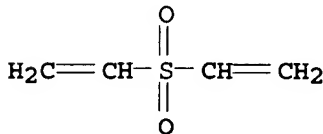
RN 67-71-0 HCAPLUS

CN Methane, sulfonylbis- (9CI) (CA INDEX NAME)



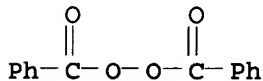
RN 77-77-0 HCAPLUS

CN Ethene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



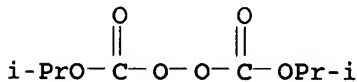
RN 94-36-0 HCAPLUS

CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



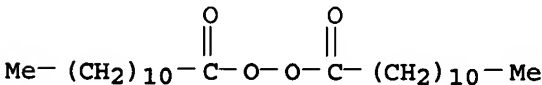
RN 105-64-6 HCAPLUS

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



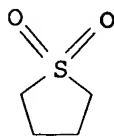
RN 105-74-8 HCAPLUS

CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)

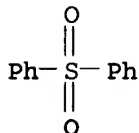


RN 126-33-0 HCAPLUS

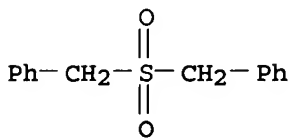
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



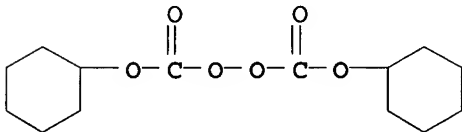
RN 127-63-9 HCAPLUS
CN Benzene, 1,1'-sulfonylbis- (9CI) (CA INDEX NAME)



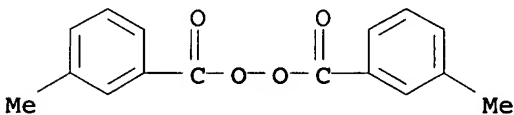
RN 620-32-6 HCAPLUS
CN Benzene, 1,1'-[sulfonylbis(methylene)]bis- (9CI) (CA INDEX NAME)



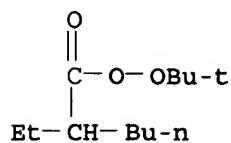
RN 1561-49-5 HCAPLUS
CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 1712-87-4 HCAPLUS
CN Peroxide, bis(3-methylbenzoyl) (9CI) (CA INDEX NAME)

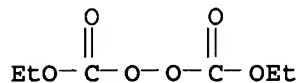


RN 3006-82-4 HCAPLUS
CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

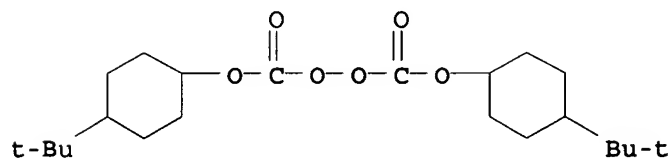


RN 14666-78-5 HCAPLUS

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 15520-11-3 HCAPLUS

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
(CA INDEX NAME)

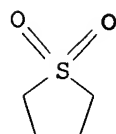
RN 28452-93-9 HCAPLUS

CN Thiophene, dihydro-, 1,1-dioxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

CM 1

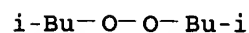
CRN 126-33-0

CMF C4 H8 O2 S



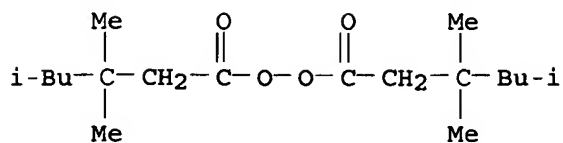
RN 32752-09-3 HCAPLUS

CN Peroxide, bis(2-methylpropyl) (9CI) (CA INDEX NAME)



RN 92177-99-6 HCAPLUS

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



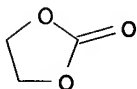
L36 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:727549 HCAPLUS
 DN 139:397889
 TI Oxygen Transport Properties of Organic Electrolytes and Performance of
 Lithium/Oxygen **Battery**
 AU Read, J.; Mutolo, K.; Ervin, M.; Behl, W.; Wolfenstine, J.; Driedger, A.;
 Foster, D.
 CS US Army Research Laboratory, AMSRL-SE-DC, Adelphi, MD, 20783-1197, USA
 SO Journal of the Electrochemical Society (2003), 150(10), A1351-A1356
 CODEN: JESQAN; ISSN: 0013-4651
 PB Electrochemical Society
 DT Journal
 LA English
 AB The oxygen transport properties of several organic electrolytes were
 characterized through measurements of oxygen solubility and electrolyte
 viscosity. Oxygen diffusion coeffs. were calculated from electrolyte
 viscosities using the Stokes-Einstein relation. Oxygen solubility, electrolyte
 viscosity, and oxygen partial pressure were all directly correlated to
 discharge capacity and rate capability. Substantial improvement in cell
 performance was achieved through electrolyte optimization and increased
 oxygen partial pressure. The concentration of oxygen in the electrode under
 discharge was calculated using a semi-infinite medium model with simultaneous
 diffusion and reaction. The model was used to explain the dependence of
 cell performance on oxygen transport in organic electrolyte.
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy
 Technology)
 Section cross-reference(s): 45, 72, 76
 ST oxygen diffusion lithium **battery** electrolyte soly viscosity
 oxide capacity
 IT Solubility
 (Bunsen coeffs. of oxygen in solvents and lithium salt/solvent
 electrolyte mixts.; oxygen transport properties of organic electrolytes
 and performance of lithium/oxygen **battery**)
 IT Fluoropolymers, uses
 RL: DEV (Device component use); TEM (Technical or engineered material
 use); USES (Uses)
 (composite cathode with Super P; oxygen transport properties of organic
 electrolytes and performance of lithium/oxygen **battery**)
 IT Primary **batteries**
 (lithium; oxygen transport properties of organic electrolytes and
 performance of lithium/oxygen **battery**)
 IT Electric impedance
 (of **batteries** with various electrolyte solns.; oxygen
 transport properties of organic electrolytes and performance of
 lithium/oxygen **battery**)
 IT Ionic conductivity
 Viscosity
 (of lithium salt/solvent electrolyte mixts.; oxygen transport
 properties of organic electrolytes and performance of lithium/oxygen
battery)
 IT Absorption

- (of oxygen by electrolyte solns.; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT **Battery electrolytes**
(oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT Diffusion
(oxygen; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT Electric energy
(specific discharge capacity; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 7440-44-0, Super P, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(activated, composite cathode with PTFE; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(cathode support and current collectors; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 9002-84-0, PTFE
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(composite cathode with Super P; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 7782-44-7, Oxygen, uses
RL: PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(diffusion; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 21324-40-3, Lithium hexafluorophosphate (LiPF₆)
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(electrolyte solute; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 67-68-5, Dimethyl sulfoxide, uses 96-48-0, γ -Butyrolactone
96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate
109-99-9, Tetrahydrofuran, uses 110-71-4, 1,2-Dimethoxyethane
112-49-2, Triethylene glycol dimethyl ether 126-33-0, Tetramethylene sulfone 143-24-8, Tetraethylene glycol dimethyl ether 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 872-50-4, uses
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(electrolyte solvent; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 12031-80-0, Lithium peroxide (Li₂O₂) 12057-24-8, Lithium oxide (Li₂O), formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(film formed on cathode to kill discharge; oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)
- IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(oxygen transport properties of organic electrolytes and performance of lithium/oxygen **battery**)

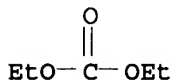
IT 7440-02-0, Nickel, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(oxygen transport properties of organic electrolytes and performance of lithium/oxygen battery)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 126-33-0, Tetramethylene sulfone 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(electrolyte solvent; oxygen transport properties of organic electrolytes and performance of lithium/oxygen battery)

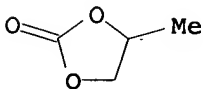
RN 96-49-1 HCAPLUS
CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



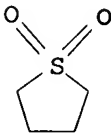
RN 105-58-8 HCAPLUS
CN Carbonic acid, diethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



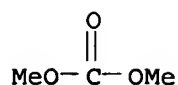
RN 108-32-7 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



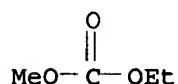
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



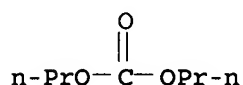
RN 616-38-6 HCAPLUS
CN Carbonic acid, dimethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



RN 623-53-0 HCAPLUS
 CN Carbonic acid, ethyl methyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 623-96-1 HCAPLUS
 CN Carbonic acid, dipropyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:656287 HCAPLUS
 DN 139:182872
 TI Polymer electrolyte for lithium secondary battery
 IN Jung, Cheol-Soo; Kim, Ki-Ho; Bong, Cul-Hwen; Yang, Doo-Kyung; Lee, Kyoung-Hee; Lee, Yong-Beom; Lim, Hyun-Leong; Yamaguchi, Takitaro; Shimizu, Ryuichi
 PA Samsung SDI Co., Ltd., S. Korea
 SO U.S. Pat. Appl. Publ., 14 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003157411	A1	20030821	US 2002-287486	20021105
	KR 2003068714	A	20030825	KR 2002-8303	20020216
	JP 2003249264	A2	20030905	JP 2003-31544	20030207
	CN 1438727	A	20030827	CN 2003-103890	20030214
PRAI	KR 2002-8303	A	20020216		

AB A solid polymer electrolyte, a lithium battery employing the same, and methods of forming the electrolyte and the lithium battery are disclosed. The polymer electrolyte includes polyester methacrylate having a polyester polyol moiety having three or more hydroxide (-OH) groups, at least one hydroxide group being substituted by a methacrylic ester group and at least one hydroxide group being substituted by a radical non-reactive group, or its polymer, a peroxide having 6-40 carbon atoms, and an electrolytic solution including a lithium salt and an organic solvent.

IC ICM H01M010-40
 ICS H01M010-04
 INCL 429317000; 429307000; 429316000; 029623100

CC 52-2 (**Electrochemical, Radiational, and Thermal Energy Technology**)
Section cross-reference(s): 38

ST polymer electrolyte lithium secondary **battery**

IT Aromatic hydrocarbons, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fluoro; polymer electrolyte for lithium secondary **battery**)

IT Secondary **batteries**
(lithium; polymer electrolyte for lithium secondary **battery**)

IT **Battery electrolytes**
Polymer electrolytes
(polymer electrolyte for lithium secondary **battery**)

IT Polyesters, uses
RL: DEV (Device component use); USES (Uses)
(polymer electrolyte for lithium secondary **battery**)

IT 3087-37-4, Tetrapropyltitanate
RL: CAT (Catalyst use); USES (Uses)
(polymer electrolyte for lithium secondary **battery**)

IT 94-36-0, Benzoyl peroxide, processes 105-74-8, Lauroyl peroxide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(polymer electrolyte for lithium secondary **battery**)

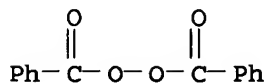
IT 67-68-5, DmsO, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 96-47-9, 2-Methyltetrahydrofuran 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate 98-95-3, Nitrobenzene, uses 100-47-0, Benzonitrile, uses 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 108-90-7, Chlorobenzene, uses 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 111-46-6, Diethylene glycol, uses 115-10-6, Dimethyl ether 126-33-0, Sulfolane 127-19-5, Dimethylacetamide 542-52-9, Dibutyl carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 646-06-0, Dioxolane 872-36-6, Vinylene carbonate 1072-47-5, 1,3-Dioxolane, 4-methyl 1300-21-6, Dichloroethane 4437-85-8, Butylene carbonate 6482-34-4, Diisopropyl carbonate 7447-41-8, Lithium chloride (LiCl), uses 7791-03-9, Lithium perchlorate 9002-88-4, Polyethylene 9003-07-0, Polypropylene 10377-51-2, Lithium iodide (LiI) 14024-11-4, Aluminum lithium chloride AlLiCl_4 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 30714-78-4, Ethyl butyl carbonate 33454-82-9, Lithium triflate 51729-83-0, Methyl isopropyl carbonate 56525-42-9, Methyl propyl carbonate 90076-65-6 131651-65-5
RL: DEV (Device component use); USES (Uses)
(polymer electrolyte for lithium secondary **battery**)

IT 95-52-3, 2-Fluorotoluene 352-32-9, 4-Fluorotoluene 352-70-5, 3-Fluorotoluene 462-06-6, Benzene, fluoro- 581054-59-3D, mixed acrylic and pentanoic acid esters
RL: MOA (Modifier or additive use); USES (Uses)
(polymer electrolyte for lithium secondary **battery**)

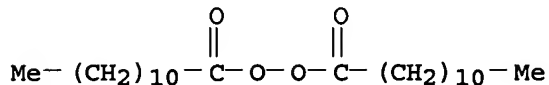
IT 94-36-0, Benzoyl peroxide, processes 105-74-8, Lauroyl peroxide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(polymer electrolyte for lithium secondary **battery**)

RN 94-36-0 HCAPLUS

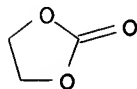
CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



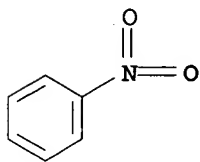
RN 105-74-8 HCAPLUS
 CN Peroxide, bis(1-oxododecyl) (9CI) (CA INDEX NAME)



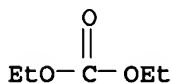
IT 96-49-1, Ethylene carbonate 98-95-3,
 Nitrobenzene, uses 105-58-8, Diethyl carbonate
 108-32-7, Propylene carbonate 108-90-7,
 Chlorobenzene, uses 126-33-0, Sulfolane 616-38-6,
 Dimethyl carbonate 623-53-0, Ethyl methyl
 carbonate 623-96-1, Dipropyl carbonate
 4437-85-8, Butylene carbonate 56525-42-9,
 Methyl propyl carbonate
 RL: DEV (Device component use); USES (Uses)
 (polymer electrolyte for lithium secondary battery)
 RN 96-49-1 HCAPLUS
 CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



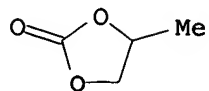
RN 98-95-3 HCAPLUS
 CN Benzene, nitro- (8CI, 9CI) (CA INDEX NAME)



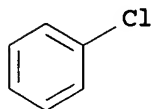
RN 105-58-8 HCAPLUS
 CN Carbonic acid, diethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



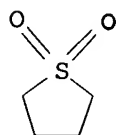
RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



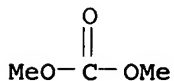
RN 108-90-7 HCAPLUS
CN Benzene, chloro- (8CI, 9CI) (CA INDEX NAME)



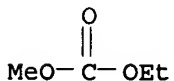
RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



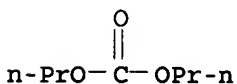
RN 616-38-6 HCAPLUS
CN Carbonic acid, dimethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



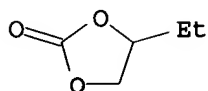
RN 623-53-0 HCAPLUS
CN Carbonic acid, ethyl methyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



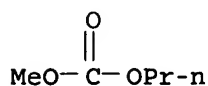
RN 623-96-1 HCAPLUS
CN Carbonic acid, dipropyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



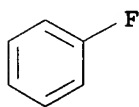
RN 4437-85-8 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-ethyl- (9CI) (CA INDEX NAME)



RN 56525-42-9 HCAPLUS
 CN Carbonic acid, methyl propyl ester (7CI, 9CI) (CA INDEX NAME)

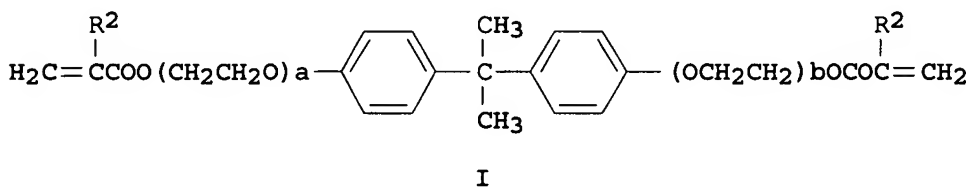


IT 462-06-6, Benzene, fluoro-
 RL: MOA (Modifier or additive use); USES (Uses)
 (polymer electrolyte for lithium secondary **battery**)
 RN 462-06-6 HCAPLUS
 CN Benzene, fluoro- (8CI, 9CI) (CA INDEX NAME)



L36 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2001:704778 HCAPLUS
 DN 135:257610
 TI Ion conductive solid for solid electrolyte and solid electrolyte and
 electric **battery** made from the same
 IN Watanabe, Takashi; Nakaya, Hiroyuki
 PA Sekisui Chemical Co. Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001261763	A2	20010926	JP 2000-80473	20000322
PRAI	JP 2000-80473		20000322		
GI					



AB The solid is made from ≥ 1 kind of $R1C(:CH_2)COO(CH_2CH_2O)_nSO_2Me$ ($R1 = H, C<10$ alkyl, fluorinated alkyl; $n < 20$). Thus, a solid **electrolyte** for preparation of **battery** was made by a copolymer of Blemmer PE 200 and A-BPE 20 ($I, R2 = H$) containing $MeSO_3(CH_2CH_2O)_3Me$, **benzoylperoxide**, and $LiPF_6$.

IC ICM C08F299-02
ICS C08F220-26; C08F220-38; C08F290-06; C08K003-24; C08L055-00; C08L101-02; H01B001-06; H01M006-18; H01M008-02; H01M010-40

CC 35-4 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 52

ST ion conductive solid **electrolyte battery**; ethoxylated **sulfone** plasticizer acrylate polymer

IT Ionic conductors
Primary **batteries**
Solid electrolytes
(ion conductive solid for solid electrolyte and solid electrolyte and elec. **battery** made from the same)

IT 25014-41-9, Polyacrylonitrile **106209-61-4** 362047-86-7
RL: TEM (Technical or engineered material use); USES (Uses)
(ion conductive solid for solid electrolyte and solid electrolyte and elec. **battery** made from the same)

IT 74654-05-0 175172-61-9
RL: MOA (Modifier or additive use); USES (Uses)
(plasticizers; ion conductive solid for solid electrolyte and solid electrolyte and elec. **battery** made from the same)

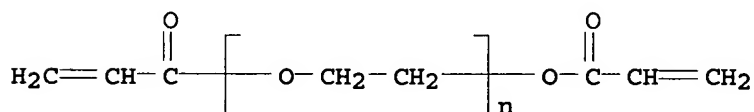
IT **106209-61-4**
RL: TEM (Technical or engineered material use); USES (Uses)
(ion conductive solid for solid electrolyte and solid electrolyte and elec. **battery** made from the same)

RN 106209-61-4 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α -(1-oxo-2-propenyl)- ω -[(1-oxo-2-propenyl)oxy]-, polymer with α -(2-methyl-1-oxo-2-propenyl)- ω -hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

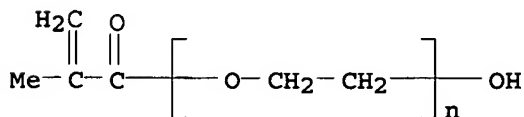
CM 1

CRN 26570-48-9
CMF $(C_2 H_4 O)_n C_6 H_6 O_3$
CCI PMS



CM 2

CRN 25736-86-1
CMF $(C_2 H_4 O)_n C_4 H_6 O_2$
CCI PMS



L36 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:182846 HCAPLUS

DN 132:208995

TI Oxidation- and chemically resistant polymer electrolytes, their manufacture, and their uses in ion exchangers, fuel cells, and automobiles

IN Kidai, Kiyoyuki; Morikawa, Hirofumi

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000080166	A2	20000321	JP 1999-191403	19990706
PRAI	JP 1998-190246	A	19980706		

AB The polymer **electrolytes**, useful for water treatment, **electrolytic** cells, dialysis, and fuel cells, comprise (A) poly(arylene sulfide **sulfones**) (PASS) and/or poly(arylene **sulfones**) (PAS) having ion-exchange groups or (B) base polymers having ion-exchange groups and PASS and/or PAS. Thus, poly(phenylene sulfide **sulfone**) was dissolved in N-methylpyrrolidone, applied on carbon paper, and immersed in H₂O to give a porous membrane, which was impregnated with a solution containing Nafion (ion-exchange resin) and dried to give an ion-exchange membrane showing average oxidation degree of S (except SO₃H group) 1.0, ion-exchange capacity 0.5 mequiv/g, and good resistance to oxidation by Fenton reagents.

IC ICM C08G075-02

ICS B01D071-68; B01J039-18; B01J041-12; B01J045-00; B01J047-12;
C08G075-18; C08G075-20; C08J005-22; C08L071-02; C08L081-02;
C25B013-08; H01B001-06; H01M008-02

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 47, 52, 61, 72

ST polyarylene sulfide **sulfone electrolyte** ion exchanger;
oxidn resistance polyphenylene sulfide **sulfone electrolyte**

IT Chemically resistant materials

(alkali-resistant; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)

IT **Polysulfones**, uses

RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(aromatic; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)

IT Water purification

(cation exchange; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)

IT Polyoxyalkylenes, uses

RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(fluorine- and sulfo-containing, ionomers, Nafion; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion

- exchangers and fuel cells for automobiles)
- IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(fluorine-containing, sulfo-containing, ionomers, Nafion; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Membranes, nonbiological
(hollow-fiber; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Dialyzers
(membranes; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Acid-resistant materials
Automobiles
Cation exchangers
Electric vehicles
Electrolytic cells
Fuel cell **electrolytes**
Fuel cells
Solvent-resistant materials
(oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Fluoropolymers, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Fluoropolymers, uses
Fluoropolymers, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylene-, sulfo-containing, ionomers, Nafion; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Ionomers
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylenes, fluorine- and sulfo-containing, Nafion; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Polythiophenylenes
Polythiophenylenes
Polythiophenylenes
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(**polysulfone**-, fiber, membranes, hollow-fiber; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)
- IT Polythioarylenes
Polythioarylenes
Polythiophenylenes

- Polythiophenylenes
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polysulfone-; oxidation- and chemical resistant polymer electrolytes containing poly(arylene sulfide sulfones) or poly(arylene sulfones) for ion exchangers and fuel cells for automobiles)
- IT Synthetic polymeric fibers, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polysulfone-polythiophenylene, membranes, hollow-fiber; oxidation- and chemical resistant polymer electrolytes containing poly(arylene sulfide sulfones) or poly(arylene sulfones) for ion exchangers and fuel cells for automobiles)
- IT Polysulfones, uses
Polysulfones, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polythioarylene-; oxidation- and chemical resistant polymer electrolytes containing poly(arylene sulfide sulfones) or poly(arylene sulfones) for ion exchangers and fuel cells for automobiles)
- IT Polysulfones, uses
Polysulfones, uses
Polysulfones, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polythiophenylene-, fiber, membranes, hollow-fiber; oxidation- and chemical resistant polymer electrolytes containing poly(arylene sulfide sulfones) or poly(arylene sulfones) for ion exchangers and fuel cells for automobiles)
- IT Polysulfones, uses
Polysulfones, uses
RL: DEV (Device component use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polythiophenylene-; oxidation- and chemical resistant polymer electrolytes containing poly(arylene sulfide sulfones) or poly(arylene sulfones) for ion exchangers and fuel cells for automobiles)
- IT 79-21-0, Peracetic acid 93-59-4, Perbenzoic acid 4212-43-5, Perpropionic acid 7681-52-9, Sodium hypochlorite 7697-37-2, Nitric acid, reactions 7722-84-1, Hydrogen peroxide, reactions 7722-86-3, Peroxymonosulfuric acid 7726-95-6, Bromine, reactions 7782-50-5, Chlorine, reactions 13122-71-9, Perbutyric acid 28831-12-1, Oxon
RL: RCT (Reactant); RACT (Reactant or reagent)
(S-oxidizing agent; oxidation- and chemical resistant polymer electrolytes containing poly(arylene sulfide sulfones) or poly(arylene sulfones) for ion exchangers and fuel cells for automobiles)
- IT 27028-97-3DP, Poly(phenylene sulfide sulfone), oxidized or sulfonated
RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oxidation- and chemical resistant polymer electrolytes containing poly(arylene sulfide sulfones) or poly(arylene sulfones) for ion exchangers and fuel cells for automobiles)
- IT 27028-97-3, Poly(phenylene sulfide sulfone)
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); TEM

(Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)

(oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)

IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropyl alcohol, uses 68-12-2, Dimethylformamide, uses 71-23-8, n-Propyl alcohol, uses 79-20-9, Methyl acetate 79-43-6, Dichloroacetic acid, uses 80-73-9 106-48-9, p-Chlorophenol 108-21-4, Isopropyl acetate 108-39-4, uses 109-60-4, Propyl acetate 110-19-0, Isobutyl acetate 123-86-4, Butyl acetate 141-78-6, Ethyl acetate, uses 680-31-9, Hexamethylphosphoric triamide, uses 872-50-4, N-Methylpyrrolidone, uses 7732-18-5, Water, uses

RL: NUU (Other use, unclassified); USES (Uses)

(solvent in film formation; oxidation- and chemical resistant polymer **electrolytes** containing poly(arylene sulfide **sulfones**) or poly(arylene **sulfones**) for ion exchangers and fuel cells for automobiles)

L36 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:375786 HCAPLUS

DN 131:7556

TI Fire-resistant gas generating **battery** electrolytes

IN Narang, Subhash; Ventura, Susanna; Cox, Philip

PA SRI International, USA

SO PCT Int. Appl., 36 pp.

CODEN: PIXXD2

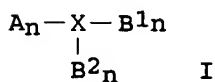
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9928987	A1	19990610	WO 1998-US25466	19981201
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ, DE, DE, DK, DK, EE, EE, ES, FI, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2313027	AA	19990610	CA 1998-2313027	19981201
	AU 9916161	A1	19990616	AU 1999-16161	19981201
	EP 1042838	A1	20001011	EP 1998-960601	19981201
	R: DE, GB				
	JP 2001525597	T2	20011211	JP 2000-523720	19981201
PRAI	US 1997-67226P	P	19971202		
	WO 1998-US25466	W	19981201		

GI



AB A compound that generates a fire-retardant gas upon decomposition has general structure (I) wherein, X is N, C, S, NO, N2, CO, SO; A is substantially

any organic moiety including alkyl, aryl, alkoxy, cyclic, fused cyclic, heteroatoms, ketals, acetals or alcs. B1 and B2 are substantially any organic moiety including alkyl, aryl, alkoxy, cyclic, fused cyclic, heteroatoms, ketals, acetals or alcs., also including oxygen, hydrogen and null; and n is an integer from 0-100. Preferred gases generated thereby include CO, SO₂, SO₃, NO, N₂O, NO₂ and N₂. It is also preferred that the generated gas assists in formation of a solid electrolyte interface (SEI) between the electrolyte and at least one of the electrodes. It is most preferred that the cell have a conductivity greater than 10⁻³ S/cm.

- IC ICM H01M010-40
- CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
- ST **battery** electrolyte fire resistant gas generation
- IT **Azo** compounds
 - Azoxy** compounds
 - Nitrites
 - Sulfates, uses
 - Sulfites
 - Sulfones**
- RL: MOA (Modifier or additive use); USES (Uses)
 - (**electrolyte** additive; fire-resistant gas generating **battery electrolytes**)
- IT **Battery** electrolytes
 - Fire-resistant materials
 - (fire-resistant gas generating **battery electrolytes**)
- IT Fluoropolymers, uses
 - RL: MOA (Modifier or additive use); USES (Uses)
 - (fire-resistant gas generating **battery electrolytes**)
- IT **Secondary batteries**
 - (lithium; fire-resistant gas generating **battery electrolytes**)
- IT 78-67-1, **Azobis**(isobutyronitrile) 78-82-0, Isopropyl nitrile 543-29-3, Isobutyl nitrate 822-38-8, Ethylene trithiocarbonate 3741-38-6, Ethylene sulfite 25843-45-2, **Azoxymethane** 28322-92-1 28452-93-9, Butadiene sulfone
 - RL: MOA (Modifier or additive use); USES (Uses)
 - (**electrolyte** additive; fire-resistant gas generating **battery electrolytes**)
- IT 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses 12057-17-9, Lithium manganese oxide limn2o4 12068-85-8, Iron disulfide 52627-24-4, Cobalt lithium oxide
 - RL: DEV (Device component use); USES (Uses)
 - (fire-resistant gas generating **battery electrolytes**)
- IT 96-49-1, Ethylene **carbonate** 616-38-6, Dimethyl **carbonate** 21324-40-3, Lithium hexafluorophosphate
 - RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 - (fire-resistant gas generating **battery electrolytes**)
- IT 630-08-0, Carbon monoxide, formation (nonpreparative) 7446-09-5, Sulfur dioxide, formation (nonpreparative) 7446-11-9, Sulfur trioxide, formation (nonpreparative) 7727-37-9, Nitrogen, formation (nonpreparative) 10024-97-2, Nitrogen oxide (N₂O), formation (nonpreparative) 10102-43-9, Nitric oxide, formation (nonpreparative) 10102-44-0, Nitrogen dioxide, formation (nonpreparative)
 - RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 - (fire-resistant gas generating **battery electrolytes**)
- IT 78-40-0, Triethyl phosphate 24937-79-9
 - RL: MOA (Modifier or additive use); USES (Uses)
 - (fire-resistant gas generating **battery electrolytes**)
- IT 78-67-1, **Azobis**(isobutyronitrile) 28452-93-9,

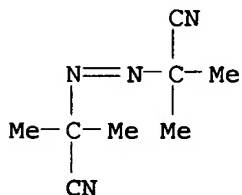
Butadiene sulfone

RL: MOA (Modifier or additive use); USES (Uses)

(electrolyte additive; fire-resistant gas generating
battery electrolytes)

RN 78-67-1 HCAPLUS

CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



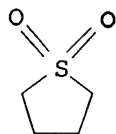
RN 28452-93-9 HCAPLUS

CN Thiophene, dihydro-, 1,1-dioxide (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 126-33-0

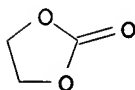
CMF C4 H8 O2 S

IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl
carbonateRL: DEV (Device component use); TEM (Technical or engineered material
use); USES (Uses)

(fire-resistant gas generating battery electrolytes)

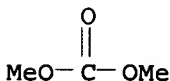
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



RN 616-38-6 HCAPLUS

CN Carbonic acid, dimethyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L36 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:702055 HCAPLUS

DN 128:13756

TI Acrylic polyurethane solid electrolyte-formable compositions and manufacture of solid electrolytes using them

IN Takiyama, Eiichiro; Matsui, Fumio; Morita, Katsuhisa; Takino, Yukiko; Ogiwara, Kazushige; Takahashi, Kentaro

PA Showa Highpolymer Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09278971	A2	19971028	JP 1996-88528	19960410
PRAI	JP 1996-88528		19960410		

AB The compns. contain (A) monomers having (meth)acryloyl groups and acetoacetoxy groups in a mol., (B) unsatd. polyurethanes obtained by reaction of (meth)acryloyl- and OH-having unsatd. polyesters with isocyanates, (C) Li compds., and (D) solvents which can dissolve the Li compds. The electrolytes are manufactured by polymerization of the above compns., which may be previously partially polymerized to control the viscosity, in a die. The compns. are useful for manufacture of film batteries. Thus, a composition containing AAEM (acetoacetoxyethyl methacrylate) 100, an unsatd. polyurethane [obtained by reaction of Placel FM 5 with MOI (isocyanatoethyl methacrylate)] 15, propylene carbonate 185, LiBF₄ 30, and benzoyl peroxide 2 parts was casted between 2 Pt electrode plate and polymerized at 80-100° for 2 h under N flow to give a soft gelatin-like polymer film with elec. conductivity 2.1×10^{-4} S/cm.

IC ICM C08L033-14

ICS C08K003-24; C08L075-14; H01B001-06; H01M006-18; H01M010-40

CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 52

ST acrylic polyurethane solid electrolyte lithium salt; cast polymn acrylic polyurethane solid electrolyte; acetoacetoxyethyl acrylate polyurethane lithium salt electrolyte; methacrylate acetoacetoxyethyl polyurethane lithium salt electrolyte

IT Polyurethanes, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(acrylic; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT Polymerization

(casting; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT Battery electrolytes

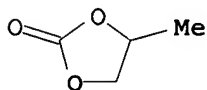
(manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT Polyurethanes, preparation

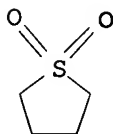
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyoxyalkylene-, acrylic; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

- IT Polyelectrolytes
(solid; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT 198956-70-6P 198956-71-7P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT 7791-03-9, Lithium perchlorate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 33454-82-9, Lithium trifluoromethanesulfonate
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT 75-05-8, Acetonitrile, uses 96-48-0, γ -Butyrolactone 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- IT 108-32-7, Propylene carbonate 126-33-0, Sulfolane
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)
- RN 108-32-7 HCAPLUS
CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



- RN 126-33-0 HCAPLUS
CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



- L36 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:699316 HCAPLUS
DN 128:23638
TI Acrylic polyurethane solid electrolyte-formable compositions and manufacture of solid electrolytes from them
IN Takiyama, Eiichiro; Matsui, Fumio; Morita, Katsuhisa; Takino, Sachiko; Ogiwara, Kazushige; Takahashi, Kentaro

PA Showa Highpolymer Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09278972	A2	19971028	JP 1996-88529	19960410
PRAI	JP 1996-88529		19960410		

AB The compns. contain (A) monomers having (meth)acryloyl groups and acetoacetoxy groups in a mol., (B) unsatd. polyurethanes obtained by reaction of polyester polyols with unsatd. isocyanates, (C) Li compds., and (D) solvents which can dissolve the Li compds. The electrolytes are manufactured by polymerization of the above compns., which may be previously partially polymerized to control the viscosity, in a die. The compns. are useful for manufacture of film batteries. Thus, a composition containing AAEM (acetoacetoxyethyl methacrylate) 100, an unsatd. polyurethane (obtained by reaction of a polyester polyol from di-Et malonate and ethylene glycol with isocyanatoethyl methacrylate) 15, propylene carbonate 215, LiBF₄ 33, and benzoyl peroxide 2 parts was casted between 2 Pt electrode plate and polymerized at 80-100° for 2 h under N flow to give a soft gelatin-like polymer film with elec. conductivity 2.7 + 10⁻⁴ S/cm.

IC ICM C08L033-14
 ICS C08K003-24; C08L075-14; H01B001-06; H01M006-18; H01M010-40

CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 52

ST acrylic polyester polyurethane solid electrolyte lithium; cast polymn acrylic polyester polyurethane electrolyte; acetoacetoxyethyl acrylate polyurethane polyester lithium electrolyte; methacrylate acetoacetoxyethyl polyester polyurethane lithium electrolyte

IT Polymerization
 (casting; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT Battery electrolytes
 (manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT Polyurethanes, preparation
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (polyester-, acrylic; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT Polyelectrolytes
 (solid; manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT 199115-94-1P 199297-26-2P
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (manufacture of solid electrolytes from acrylic polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li compds.)

IT 7791-03-9, Lithium perchlorate 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium

hexafluorophosphate 33454-82-9, Lithium trifluoromethanesulfonate
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)

(manufacture of solid electrolytes from acrylic polyurethanes compns. containing
 acetoacetoxyethyl (meth)acrylate, unsatd. polyurethanes, and Li
 compds.)

IT 75-05-8, Acetonitrile, uses 96-48-0, γ -Butyrolactone

108-32-7, Propylene carbonate 110-71-4,

1,2-Dimethoxyethane 126-33-0, Sulfolane

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; manufacture of solid electrolytes from acrylic
 polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd.
 polyurethanes, and Li compds.)

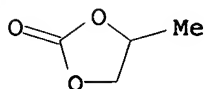
IT 108-32-7, Propylene carbonate 126-33-0,
 Sulfolane

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; manufacture of solid electrolytes from acrylic
 polyurethanes compns. containing acetoacetoxyethyl (meth)acrylate, unsatd.
 polyurethanes, and Li compds.)

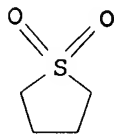
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



RN 126-33-0 HCAPLUS

CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



L36 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:754386 HCAPLUS

DN 126:92052

TI Catalyst-containing solid electrolytes and batteries using these
 electrolytes

IN Chaloner-Gill, Benjamin; Olsen, Ib I.; Saidi, Eileen S.

PA USA

SO U.S., 8 pp.

CODEN: USXXAM

DT Patent

LA English

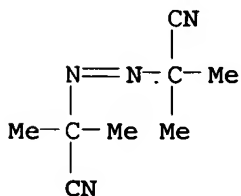
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 5580680	A	19961203	US 1994-267066	19940627
PRAI	US 1994-267066		19940627		

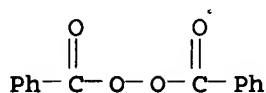
AB The electrolytes include a 1st catalyst that is capable of initiating the
 polymerization of solvent components at elevated temps. to increase the
 resistance (or impedance) of the solid electrolyte and thereby prevent
 thermal runaway and/or a 2nd catalyst that is capable of initiating the

polymerization of flammable substances (e.g., olefins) in the solvent. To assure that the catalysts do not prematurely initiate polymerization below a certain temperature, the catalysts may be microencapsulated within a heat-sensitive material that disintegrates or dissolve at a predetd. elevated temperature to release the catalysts. Microencapsulation permits the controlled release of the catalysts into the electrolyte under the appropriate conditions.

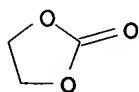
IC ICM H01M006-16
 INCL 429192000
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 37
 ST **battery** solid electrolyte solvent polymn catalyst; flammable substance polymn catalyst **battery** electrolyte; safety **battery** polymn catalyst electrolyte
 IT Polymerization catalysts
 (Ziegler-Natta; for **battery** solid electrolytes)
 IT Polymerization catalysts
 (**battery** solid electrolytes containing)
 IT **Battery** electrolytes
 (containing polymerization catalyst)
 IT Secondary **batteries**
 (lithium; with polymerization catalysts for safety)
 IT Safety
 (of lithium **batteries** with polymerization catalysts-containing solid electrolytes)
 IT Bronsted acids
 RL: CAT (Catalyst use); USES (Uses)
 (polymerization catalyst for **battery** solid electrolytes)
 IT 78-67-1, **Azobisisobutyronitrile** 94-36-0,
 Benzoyl **peroxide**, uses 110-22-5, Acetyl **peroxide**
 7440-23-5, Sodium, uses 7637-07-2, Boron trifluoride, uses
 RL: CAT (Catalyst use); USES (Uses)
 (polymerization catalyst for **battery** solid electrolytes)
 IT 67-68-5, uses 96-48-0, γ -Butyrolactone 96-49-1, Ethylene
carbonate 108-32-7, Propylene **carbonate**
 110-71-4, Glyme 111-96-6, Diglyme 112-49-2, Triglyme 126-33-0
 , Sulfolane 143-24-8, Tetraglyme 646-06-0, Dioxolane
 RL: MOA (Modifier or additive use); USES (Uses)
 (polymerization catalyst for **battery** solid electrolytes
 containing solvent of)
 IT 78-67-1, **Azobisisobutyronitrile** 94-36-0,
 Benzoyl **peroxide**, uses
 RL: CAT (Catalyst use); USES (Uses)
 (polymerization catalyst for **battery** solid electrolytes)
 RN 78-67-1 HCAPLUS
 CN Propanenitrile, 2,2'-azobis[2-methyl- (9CI) (CA INDEX NAME)



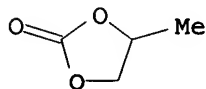
RN 94-36-0 HCAPLUS
 CN Peroxide, dibenzoyl (9CI) (CA INDEX NAME)



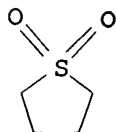
IT 96-49-1, Ethylene carbonate 108-32-7,
 Propylene carbonate 126-33-0, Sulfolane
 RL: MOA (Modifier or additive use); USES (Uses)
 (polymerization catalyst for battery solid electrolytes
 containing solvent of)
 RN 96-49-1 HCAPLUS
 CN 1,3-Dioxolan-2-one (9CI) (CA INDEX NAME)



RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (9CI) (CA INDEX NAME)



RN 126-33-0 HCAPLUS
 CN Thiophene, tetrahydro-, 1,1-dioxide (8CI, 9CI) (CA INDEX NAME)



L36 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1993:82768 HCAPLUS
 DN 118:82768
 TI Anionic dyeing of cellulosic fiber substrate grafted with N-containing monomer
 IN Dannheim, Joerg; Keil, Karl Heinz; Martini, Thomas
 PA Hoechst A.-G., Germany
 SO Eur. Pat. Appl., 23 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 509397	A1	19921021	EP 1992-106157	19920409
	EP 509397	B1	19970312		
	R: BE, CH, DE, FR, GB, IT, LI, PT				
	BR 9201379	A	19921201	BR 1992-1379	19920414
	JP 05140880	A2	19930608	JP 1992-94595	19920414

PRAI DE 1991-4112227 A 19910415

AB Cellulosic fiber materials are dyed with anionic, e.g. fiber-reactive group-containing dyes using aqueous dye and padding solns. in which the dye is dissolved where the cellulosic fiber substrate is graft polymerized with ≥ 1 N-containing basic monomer with the dyeing taking place in the absence of alkali and in the absence or in the presence of small amts. of electrolytes. A cotton fabric was graft polymerized with dimethyldiallylammonium chloride to 5.3% pickup, padded with a hydroxyethylsulfone reactive azo dye solution, wound, stored for 16 h at 20°, rinsed, and dried to give a strong, level bluish red dyeing with good rubbing-, wash-, and light-fastness.

IC ICM D06P003-66

ICS D06P003-60; D06M014-04; D06M014-22

CC 40-6 (Textiles and Fibers)

ST cellulosic fiber graft dyeing reactive; alkali free reactive dyeing cellulosic; anionic dyeing cellulosic electrolyte free

IT Dyeing

(anionic, of cellulosic fibers grafted with N-containing monomers, low electrolyte or electrolyte free)

IT Polymerization

(graft, of N-containing monomers on cellulosic substrates, for alkali and electrolyte free anionic and fiber-reactive dyeing)

IT Dyeing

(reactive, of cellulosic fiber grafted with N-containing monomers, alkali free)

IT 7398-69-8D, Dimethyldiallylammonium chloride, graft polymer with cotton

51410-72-1D, graft polymer with cotton 67296-21-3D,

Dimethylaminopropylmethacrylamide, graft polymer with cotton

RL: USES (Uses)

(dyeing of, with anionic or fiber-reactive dye, alkali- and electrolyte free)

L36 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1974:74222 HCAPLUS

DN 80:74222

TI Selective electrodialysis of cations

IN Sata, Toshikatsu; Nishimura, Masakatsu; Izuo, Ryuji

PA Tokuyama Soda Co., Ltd.

SO Ger. Offen., 35 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2326052	A1	19731206	DE 1973-2326052	19730522
	DE 2326052	B2	19801030		
	DE 2326052	C3	19820107		
	JP 49014382	A2	19740207	JP 1972-49871	19720522
	US 3847772	A	19741112	US 1973-362455	19730521
	FR 2185431	A1	19740104	FR 1973-18546	19730522
	GB 1437271	A	19760526	GB 1973-24469	19730522
PRAI	JP 1972-49871	A	19720522		

AB An aqueous electrolyte containing at least 2 types of cations having different charges, and with a pH of 3.0 - 7.5, is electrodialyzed through a cation exchange membrane having a cationic material on its surface. Cations with lower charges are preferentially electrodialyzed. The cationic material having a mol. weight of at least 100, should be ≥ 0.1 mg/dm² of membrane. Thus, a membrane was produced by polymerizing a mixture of powdered poly(vinyl chloride) 100, styrene 90, divinylbenzene 10, dioctyl

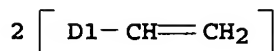
phthalate 30, benzoyl peroxide 1 part, which was spread on a polyethylene screen. A sulfone ion exchange group was introduced by 24 hr immersion in 98% H2SO4, and a cationic surface material by 6 hr immersion in an aqueous solution containing polyethyleneimine 2000 ppm. The membranes are suitable for desalination or concentration of sea water or other salt solns.

IC B01D; C02B
CC 61-3 (Water)
ST seawater desalination electrodialysis
IT Water purification
(electrodialysis, membranes for)
IT Membranes
(for electrodialysis)
IT Benzene, diethenyl-, polymer with ethenylbenzene and 5-ethenyl-2-methylpyridine, sulfonated
Benzene, ethenyl-, polymer with diethenylbenzene and 5-ethenyl-2-methylpyridine, sulfonated
RL: OCCU (Occurrence)
(graft, membranes, for electrodialysis)
IT Benzene, ethenyl-, homopolymer, chloromethylated, quaternary ammonium derivs.
RL: OCCU (Occurrence)
(membranes from sulfonated styrene copolymers and, for electrodialysis)
IT 1,3-Butadiene, polymer with ethenylbenzene, sulfonated
Benzene, ethenyl-, polymer with 1,3-butadiene, sulfonated
RL: OCCU (Occurrence)
(membranes, containing PVC, for electrodialysis)
IT 2-Propenoic acid, 2-methyl-, oxiranylmethyl ester, homopolymer, reaction products with ammonia and triphenylphosphine
Benzene, diethenyl-, polymer with ethenylbenzene, sulfonated
Benzene, ethenyl-, polymer with diethenylbenzene, sulfonated
RL: OCCU (Occurrence)
(membranes, for electrodialysis)
IT 25037-79-0
RL: PROC (Process)
(electrodialysis of, membranes for)
IT 9017-47-4D, Pyridine, 5-ethenyl-2-methyl-, polymer with diethenylbenzene and ethenylbenzene, sulfonated 52309-44-1
RL: OCCU (Occurrence)
(graft, membranes, for electrodialysis)
IT 9002-86-2 9003-00-3
RL: OCCU (Occurrence)
(membranes, containing sulfonated styrene copolymer, for electrodialysis)
IT 603-35-0D, Phosphine, triphenyl-, reaction products with ammonia and poly(glycidyl methacrylate) 7664-41-7D, Ammonia, reaction products with poly(glycidyl methacrylate) and triphenylphosphine 9020-13-7 25232-41-1D, Pyridine, 4-ethenyl-, homopolymer, quaternized
RL: OCCU (Occurrence)
(membranes, for electrodialysis)
IT 9020-13-7
RL: OCCU (Occurrence)
(membranes, for electrodialysis)
RN 9020-13-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, polymer with diethenylbenzene and ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

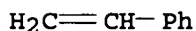
CRN 1321-74-0

CMF C10 H10
CCI IDS



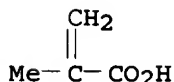
CM 2

CRN 100-42-5
CMF C8 H8



CM 3

CRN 79-41-4
CMF C4 H6 O2



L36 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1964:28847 HCAPLUS

DN 60:28847

OREF 60:5069f-g

TI New organic depolarizers

AU McElhill, E. A.; Williams, D. L.; Gruber, B. A.

CS Monsanto Res. Corp., St. Louis, MO

SO Proc., Ann. Power Sources Conf. (1963), 17, 145-8

DT Journal

LA Unavailable

AB Over 200 different organic compds. containing various reducible groups were tested for depolarizer activity in a specially designed half-cell.

Nitriles, **sulfones**, sulfoxides, phosphine oxides, diazonium

salts, isothiocyanates, **cyanoimidodithiocarbonates**, and unsatn.

in rings (except some N heterocycles) were inactive. Groups that reduced

some or all of the structures included nitro, nitroso, hydroxylamine,

azoxy, **azo**, nitrate, nitrolic acid, pseudonitrole,

quinone, quinonediimines, carbodiimide, iodoso, iodoxy, **peroxide**

, acetylenic and ethylenic linkages, elemental halogen addition compds., and

activated halogens. As the reaction proceeds the loss of conductivity of

electrolyte or pore plugging of cathode by bulky products

overshadows the structural advantages of individual depolarizers.

CC 15 (Electrochemistry)
IT Unsaturated compounds
(acetylenic and olefinic, as storage-battery depolarizers)
IT Azo compounds
Azoxy compounds
Nitro compounds
Nitrolic acids
Nitroso compounds
Peroxides
(as storage-battery depolarizers)
IT Amines
(compds. or salts of, with halogens, as storage-battery depolarizers)
IT Depolarizers
(organic, for storage batteries)
IT Halogen compounds
(with tertiary amines, as storage-battery depolarizers)
IT Hydrogen bromochlorobromate(I), compound with quinoline
Hydrogen dichloroiodate(I), compound with quinoline
(as storage-battery depolarizer)
IT Iodoso group
Iodoxy group
(compds. containing, as storage-battery depolarizers)
IT Bromate(I), bromochloro-
Iodides, dichloro-
(in storage-battery depolarizer)
IT 94-36-0, Benzoyl peroxide 99-65-0, Benzene, m-dinitro- 100-25-4,
Benzene, p-dinitro- 103-72-0, Isothiocyanic acid, phenyl ester
3454-11-3, Acetonitrolic acid, potassium salt 32602-96-3, Pyrrole,
2,5-dinitro- 65537-98-6, 1,2,4,5-Benzenetetracarboxylic acid,
3,6-dinitro- 93064-53-0, Quinoline, dichloroiodate(I) 94032-69-6,
1,2,4,5-Benzenetetracarboxylic acid, 3,6-dinitro-, tetrasodium salt
94387-13-0, Quinoline, bromochlorobromate(I)
(as storage-battery depolarizer)
IT 106-51-4, p-Benzoquinone 151-51-9, Carbodiimide 4377-73-5,
p-Benzoquinone diimine 7803-49-8, Hydroxylamine 859048-59-2, Methane,
nitronitroso-
(derivs., as storage-battery depolarizers)
IT 7697-37-2, Nitric acid
(equilibrium (liquid-vapor) of aqueous solns. of, as storage-battery depolarizers)
IT 14522-79-3, Iodate(I), dichloro-
(in storage-battery depolarizer)

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